# Archaeological Perspective of Uttar Pradesh and Future Prospects

## PART-1

Proceedings of the Seminar : 13—15 Oct. 1990

U. P. State Archaeological Organisation
Lucknow

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*Editor*
**Dr. Rakesh Tewari**

U.P. STATE ARCHAEOLOGICAL ORGANISATION
LUCKNOW

Copy Right : U.P. State Archaeological Organisation, Lucknow

First Edition : 1992

Publisher :
Director
U.P. State Archaeological Organisation
Roshan-ud-daula Kothi, Kaiserbagh
Lucknow — 226 018, U. P. (INDIA)

Rs 50-00

Printers:
Pnar Mudrak
117, Nazirabad
Lucknow

# आमुख

लक्ष्यहीन पथिक बिना पतवार की नाव की तरह अपने पड़ाव पर भूले–भटके ही पहुँचते हैं।

उत्तर प्रदेश में पुरातत्व सम्बन्धी कार्य–कलाप भी कुछ ऐसे ही हो चले थे।

कहा गया है कि बुजुर्गों की छाया, हम उम्रों का साथ और सुनिश्चित उद्देश्य सफलता तक पहुँचाते ही हैं।

यही सोचकर 1991 के अक्टूबर माह में इस प्रदेश में पुरातत्व की सम्भावनाओं को समझने के लिये हमने एक राष्ट्रीय सेमिनार का आयोजन कराया।

इस अवसर पर अनुभवी पुराविद्, भारतीय पुरातत्व सर्वेक्षण के विशेषज्ञ, विश्वविद्यालयों के मर्मज्ञ, गुरुजन और युवा अध्येता अभूतपूर्व संख्या में, हमारा आमंत्रण स्वीकार कर, लखनऊ आये। उन्होंनें लगातार तीन दिनों तक पुरातत्व के लगभग सभी आयामों पर गहन विचार–विमर्श करके प्रदेश में पुरातात्विक कार्यों के दिशा निर्धारण के लिये बहुमूल्य संस्तुतियां कीं।

इन संस्तुतियों का लाभ उठाकर राज्य के पुरातत्व संगठन की दस वर्षीय नीति का प्रारुप

तैयार कर लिया गया है, और इस दिशा में की गयी अपेक्षाओं को पूरा करने का प्रयास किया जा रहा है।

फिर भी, सभी कार्यों को पूरा करने के लिये प्रदेश के विश्वविद्यालयों एवं अन्य शोध संस्थाओं की भागीदारी अनिवार्य है। इसलिये, सेमिनार में प्रस्तुत शोध–पत्रों में व्यक्त विचारों को उन तक पहुँचाने के उद्देश्य से उनका प्रकाशन कराया जा रहा है। इस दिशा में उत्तर प्रदेश के प्रागैतिहास से सम्बन्धित लेखों की प्रथम पुष्पांजलि "सेमिनार प्रोसीडिंग्स भाग–1," के रुप में प्रस्तुत की जा रही है ।

**आलोक सिन्हा**
सचिव
सांस्कृतिक कार्य, उ० प्र० शासन

30 मार्च, 1992
लखनऊ

# EDITORIAL

A seminar on "Archaeological Perspective of Uttar Pradesh and Future Prospects", was held in Oct. 1990 under the auspices of the U.P. State Archaeological Organisation at Lucknow. This seminar was organised with an idea to initiate a review of the performance of the past to establish the nature of the studies made so far and to decide the future approach. The response to our request to various scholars in this regard, has been very encouraging. Delegates from Archaeological Survey of India, Universities and other institutions graced the occasion by their presence in large number.

Sri M.C. Joshi, Director General, Archaeological Survey of India, inaugurated the seminar on 13th Oct. at Rai Uma Nath Bali auditorium. Key-note address was delivered by the distinguished archaeologist Sri Krishna Deva. The seminar proceeded on for three days in the adjoining Jai Shankar Prasad Conference-Hall consisting various deliberations on diverse aspects of Archaeology, which has provided an opportunity to the scholars to interact and discuss on different points in length. In all ten sessions were held followed by the recommendations of the delegates to enhance the archaeological activities in this state. An early publication of the proceedings of the seminar was also proposed.

Considering the large number of papers, presented in the seminar, it was found suitable and managable to publish these papers, subject-wise, in separate parts. The first part of the proceedings is being published accordingly. It consists of papers related to the Prehistory of Uttar Pradesh. It will provide a clear picture of the present state of our knowledge about the Stone Age and the Chalcolithic Cultures of Uttar Pradesh. Besides, we may fix priorities for future works, according to the valuable suggestions given by the renowned scholars of the respective fields in their deliberations. This publication would also suffice the need of the research scholars, as well as students of archaeology, as a reference- book, particularly for their projects related to the Prehistory of Uttar Pradesh.

We hope that other parts of the proceedings will also come out in due course.

I take this opportunity to express my gratitude to Sri Alok Sinha, Secretary, Cultural Affairs and Tourism, Govt. of U.P. for his initiative and continuous support to organise this seminar. I am also grateful to Mrs. Stuti Kakkar, Special Secretary & Director, Sri L.R. Tamta, Joint Secretary and Sri A.K. Singh Rathor, Joint Director, Cultural Affairs Deptt. U.P., who have very kindly helped us regarding financial allocation for this publication.

I am very much thankful to my colleagues who have extended full co-operation in organising this seminar. It would be appropriate to record and appreciate herein the efforts of Sri Girish Chandra Singh, Exploration Asstt. for getting this part of the proceedings printed nicely.

**Dr. Rakesh Tewari**

30 March, 1992
Lucknow

# CONTENTS

1. Key-note Address — Krishna Dev — 1
2. Lower and Middle Palaeolithic Industries of Uttar Pradesh - A Reapraisal — P.C. Pant — 13
3. Upper Palaeolithic Cultures of Uttar Pradesh — Vidula Jayaswal — 23
4. Some Aspects of the Mesolithic of the Ganga Valley — Radha Kant Varma — 47
5. Human Burial Practices at Mesolithic Damdama — J.N.Pal — 59
6. Neolithic - Chalcolithic Cultures of Eastern U.P. — Purushottam Singh — 67
7. Chalcolithic Culture of Eastern Uttar Pradesh — Birendra Pratap Singh — 77

# SEMINAR PROCEEDINGS

# KEY-NOTE ADDRESS

**Krishna Dev**

Uttar Pradesh, anciently known as Brahmarshidesa or Madhyadesa[1] had been the cradle of the epoch making Protohistoric and Historical cultures of North India. It was the nuclear zone of the cultures associated with the Copper Hoards, Ochre coloured ware (OCW), Painted Grey Ware (PGW), and Northern Black Polished Ware (NBPW), the last coinciding with the second urbanization in India. Uttar Pradesh constituted the core of the Indo-Gangetic plain which is one of the largest and most fertile alluvial plains in the world, supporting nearly half the population of South Asia. Drained by the Ganga and Yamuna together with their tributaries, it has adequate rainfall and a salubrious climate assuring an agricultural surplus, which is a condition precedent for cultural efflorescence.

Uttar Pradesh once had luxurianted forest which was infested with elephant, lion, tiger, rhinoceros, wild boar, sambhar and black buck. Lions, tigers and elephants were hunted in the Ganga-Yamuna Doab till the time of Akbar[2]. Ancient texts refer in the Doab to Kurujangala, Naimisharanya and Utpalaranya[3] mentions that the tract between the Sarasvati and the Sadanira (present Gandak) was full of thick forest. Agriculture could flourish only when the rank forest was cleared by the extensive use of metal tools preferably iron.

The history of archaeological exploration in Uttar Pradesh goes back to the 19th century when Alexander Cunningham made an extensive survey between 1861 and 1885[4] of the sites, monuments and antiquities including coins, inscriptions and sculptures all over the state (and beyond over whole of North India) and was able to indentify most of the ancient sites and towns including the Buddhist centres visited and described by Fahien and Yuan Chwang. Thus he was able to survey Ahichhatra, Mathura, Sarnath, Sravasti, Kusinagar, Kausambi, Kampilya and Sankisa among others. Cunningham's official surveys and trial excavations, like the treasure hunts and sporadic digs of private enthusiasts, however, had their own limitations. Regular excavations, were conducted after 1904 when the Archaeological Survey of India (ASI) was placed on a permanent sound footing under the enlightened stewardship of John Marshall, a gifted archaeologist. Large scale horizontal excavations were undertaken at the town site of Bhita (Distt. Allahabad) and the Buddhist sites of Sarnath, Sravasti and Kushinagar within the state between 1904 and 1924. Simultaneous operations outside the state at the major Buddhist sites of Nalanda, Sanchi and Paharpur and the important city site of Taxila have been the primary archaeological sources of our knowledge of Indian town plan of the historic period and lay-out of Buddhist establishments and a mine of information of Buddhist art, architecture and iconography. With the momentous discovery of the two premier city sites of the Indus Civilization Harappa and Mohenjodero (both in Pakistan) in 1921 and 1922, the ASI devoted its prime attention to excavations on a grand scale of these sites and to exploration of other sites associated with the Harappa Culture in Sindh and Baluchistan between 1925 and 1932.

The following lull in archaeological explorations was broken when the ASI under the leadership of Rao Bahadur K. N. Dikshit undertook between 1940 and 1944 extensive excavations at Ahichhatra and established for the first time a cultural sequence together with a pottery sequence of the upper Doab from c. 800 B.C. to c.A.D. 1100. The regime of Mortimer Wheeler, a doyen of world archaeology, between 1944 and 1947, injected a new dynamism in the old ASI which ever since has made all round progress and ranks as the best organized and scientifically oriented service in the world, With growing co- operation between the ASI and the State Departments of Archaeology, Indian Universities and Museums, Research Institute and Laboratories more archaeological explorations and research on scientific lines are taking place in India than anywhere else since Independence. Hundreds of sites ranging from the Palaeolithic to the late medieval period have been explored and scores of them excavated in U.P. providing an idea of the evolution of cultures from the earliest stage. The picture of the Upper Palaeolithic, Mesolithic, Neolithic, Megalithic and Chalcolithic cultures of U.P. which can be properly understood only in the continental perspective is still incomplete and nebulous. But thanks to the sustained efforts of the ASI, State Deptt. of Archaeology and the Universities in U.P. we have a much better and coherent picture of the Protohistoric and Historic cultures in the State.

To take a quick stock of the major archaeological operations in the State we may start with the Palaeolithic and Mesolithic tools on quartz from the Singrauli Basin (Distt Mirzapur) studied by V. D. Krishnaswamy of ASI in 1949[5]. While the palaeoliths show a dominance of the Madras biface tradition influenced by Sohan flaking technique, paralleled in the palaeolithic industry of the Narmada Valley, the microlithic blades of quartz collected from the Upper Alluium of the Balia Nadi pertain to an early Mesolithic culture. Thereafter for nearly three decades the Allahabad University team comprising G. R. Sharma, V. D. Misra, B. B. Misra, R. K. Verma and others took a leading role in the Prehistoric explorations in districts Banda, Mirzapur, Allahabad and Pratapgarh yielding valuable results. Quartzite flake tools of the Upper Palaeolithic Vintage were explored in 1955-56 in a Yamuna valley terrace at Bariyari (District Banda), while broad chert blades of the Epi-Palaeolithic tradition were collected from the river sections of the Belan and Seoti and the younger gravels of the river Son. Sustained explorations of the extensive river sections of the Belan and excavations of the rock- shelters at Morahana Pahar, Baghai Khor and Lekhahia yielded a sequence of the Upper Palaeolithic, Epi Palaeolithic and Mosolithic cultures. The excavations at Chopani Mando confirmed three clear phases of the

Mesolithic assemblages, viz. (1) non-geometric microliths without pottery (2) geometric microliths without pottery and (3) geometric microliths with pottery dated by C 14 to a time bracket of 1700-7000 B.C. which may be moderated as 12000-4000 B.C. Mesolithic camping sites were identified at Sarai Nahar Rai and Mahadaha (Distt. Pratapgarh) with occupational floors and hearths on the balk of large lakes, yielding bones of hunted animals, microliths without pottery and extended human burials.

Koldihwa in the Belan Valley proved to be a unique site of Neolithic and Chalcolithic cultures. The neolithic phase yielded remains of handmade plain as well as corded and incised wares, rounded celts and microlithic blades, burnt clay lumps of wattle-and daub hunts and rice-husks in clay, attesting one of the oldest evidence of rice. The Chalcolithic phase (C14 date 4530 B.C.) shows wheel-turned pottery, some of advanced types and painted and incised varieties, microliths, stone querns and mullers, beads of terracotta, shell and agate, and few copper peices. These discoveries have been adequately published by the University and some of the participants.

Mirzapur is reputed for its painted rock-shelters for the last 120 years and 240 such shelters are so far known, of various epochs, ranging from the Mesolithic to the Historical periods. While a few of these were published or noticed earlier, a systematic survey has been undertaken by the U.P. State Deptt. of Archaeology and a well- illustrated monograph on these rock-paintings has been recently published by its director Dr. Rakesh Tewari, presenting a comprehensive and scientific documentation of their geographical position and distribution, theme, style, superposition, antiquity and chronology, together with valuable results of scientific laboratory tests, which will help in solving the vexed problems of the age of Indian rock-art.

Regarding sites associated with Harappan culture, Alamgirpur, on the Hindon near Meerut is the first such site in U.P. and the eastern most outpost of that culture, brought to light in 1958-59 by Y.D. Sharma of ASI. The Harappa culture at Alamgirpur had dominant Bara-eliments and was succeeded, like Ropar in Distt. Ambala, by PGW culture with a break. Hulas (Distt. Saharanpur), excavated by K. N. Dikshit of ASI, is another Harappan site followed by PGW culture with a clear hiatus. The pottery from Hulas bears affinity to the Sarasvati valley Harappan sites. A large number of sites of the Late harappan phase yielding OCW have been traced in District Saharanpur of which noteworthy are Baragaon and Ambkheri excavated by M. N. Deshpande of ASI in 1963-64. These constituted mere hamlets of the degenerate Harappan phase.

Excavation at Hastinapur, situated on an old bed of the Ganga near Meerut by B. B. Lal of ASI in 1953-54[6] brought to light a sequence of two new Proto-historic cultures yeilding OCW in the lowest layer surmounted by PGW, the latter disturbed by a severe flood erosion. Lal identified the flood with the one mentioned in the **Mahabharata** which washed away old Hastinapur and made the Paurava king Nichakshu, sixth in descent from the Pandavas of the epic, to shift the capital to Kausambi. As the PGW was found in the lowest horizon of a large number of old places in U.P. and Haryana mentioned in the Mahabharata, Lal concluded that the early levels of PGW coincided with the time of the Mahabharata war in c. 950 B. C. one of its probable dates arrived at independently on other evidences. Simultaneously Lal studied the Copper Hoards and inferred that these might relate with the OCW which is a culture earlier than PGW, wherein he has encountered iron. This inference supported by circumstantial evidence from several OCW sites in Western U.P. was substantiated in his (and L.M. Wahal's) excavation at Saipai (Distt. Etawah) during 1970-71. These epoch-making discoveries by ASI were given further edge through the important excavations at Atranjikhera (Distt. Etah) by R. C. Gaur of Aligarh Muslim University wherein a clear sequence of cultures from bottom upwards of OCW, black-and-red ware and PGW, with successive dates for each culture, was determined.

Simultaneously with these significant discoveries, hundreds of sites have been explored and scores of them excavated in U.P. by the archaeologists working under the auspices of the Universities of Allahabad, Aligarh, Banaras, Garhwal and Gorakhpur and the State Deptt. of Archaeology, besides the ASI, shedding new light on the cultures of almost all ages ranging from the Prehistoric and Proto- historic to the various historical periods of c 600 B.C.-A.D. 1700.

Uttar Pradesh has the distinction of possessing among North Indian states the largest number of populous cities. This is a historical legacy of the Second Urbanization which had the greatest impact on the state. On the eve of the Second Urbanization, North India was divided into 16 Maha-Janapadas of which the largest number of 6 Janapadas, viz. Kuru-Panchala, Kasi-Kosala, Vatsa and Surasena flourished in this state with their capital towns of Hastinapura, Ahichhatra, Kampilya, Kasi, Saketa, Sravasti, Kausambi and Mathura to which may be added Kanauj. Though most of these ancient town sites were deserted in roughly the early medieval period, they contain in their bowels remains of stratified cultures assignable from about 800 B. C. to A. D. 700. Of these cultural strata, those datable between c 400 B.C. to A.D. 600, pertaining approximately to the Mauryan, Sungan, Kushana and Gupta periods of Indian history, present rich material evidence of cultural efflorescence.

Before we turn to the historical civilization, let us have a closer look at the Protohistoric cultures that once flourished in the State.

Of the 86 Copper Hoards found all over India, the largest number 33 come from the Ganga-Yamuna Doab and the second largest totalling 19 Hoards from Bihar. Of the highly specialised tool types all the known hooked swords (total 15) come exclusively from U.P., 18 out of a total of 19 known antenae swords and 28 out of 29 harpoons are from U.P. and out of 13 recorded anthropomorphs 11 are claimed by U.P. These statistics prove that the Doab was the epicentre of the Copper Hoard culture. While most of the tools were useful for chase and hunt, some like the bar celts could have been utilised for cultivation, indicating that the economy was based largely on hunting.

All Hoards but one are surface finds. Only one Hoard comprising a hooked sword and a barbed harpoon, both specialised tools, was unearthed from the OCW layers at Saipai (Distt. Etawah) in 1970-71. Earlier a cultivator had struck a Copper Hoard at the same site consisting of celts, harpoons, spear heads, rings and anthropomorphs. A Copper Hoard having 7 celts, one ring, and one hooked sword was also found by Canal diggers from Bahadarabad (Distt. Saharanpur), which is also a site of OCW, explored later by Y.D. Sharma of ASI.

The known OCW site totalling 113 are all, with a single exception of Jodhpura (Distt. Jaipur), in the Ganga-Yamuna Doab with largest concentration in District Saharanpur in the extreme north. The sites are situated on the river banks and the pottery is normally worn and rolled probably due to long water-logging. This ware was first recognized at Hastinapur where it forms the lowest faint layer surmounted with a hiatus by PGW, while at Atranjikhera again it is the lowest but a 1-1.5 m. thick layer, overlaid by a substantial deposit of PGW, with a thin intervening stratum of black-and-red ware. OCW at Saipai is significantly interlocked with Copper Hoard, while on some sites in District Saharanpur like Bargoan and Ambkheri it is associated with Late Harappan pottery types,indicating contact between OCW and Late Harappan cultures. At the single culture site at Lal Qila (Distt. Bulandshahar) excavated by R.C. Gaur of Aligarh University, the OCW is largely sturdy and wheel turned, often showing incised and painted decorations of which notable are designs of humped bull, circles, triangles and ribbon knots. Lal Qila has ample remains of mud-and-wattle and mud-brick structures. Lal Qila and Atranjikhera have yielded evidences of cultivated rice and barley. The thermo- luminiscence dates of OCW samples from several sites range between 2600 and 1200 B.C., the mean date from Lal Qila being 1880 B.C. and from Atranjikhera 1690 B.C.

The black-and-red ware, which represents a technique rather than a single culture, is found in diverse geographical and cultural contexts in the Indian sub-continent. In the upper Ganga valley it occurs in two different horizons-(1) pre-PGW horizon at Atranjikhera, and Jakhera, the former excavated by R.C. Gaur and the latter by M.D.N. Sahi, both of Aligarh University and (2) together with PGW at other sites like Ahichhatra, Alamgirpur, Allahpur and Hastinapur. In pre-PGW horizon, bowl, basin and dish are the dominant types while in the PGW horizon, the shapes conform to the PGW types. The black-and-red ware cultures at Atranjikhera is datable to 1450-1200 B.C. Its cultural equipment includes objects of Copper, terracotta and semi-precious stones.

A variety of white-painted black-and-red ware of bowl, basin and vase types, associated with copper objects has been traced in the earliest deposits of the sites situated on the Ghaghra at Narhan, excavated by Purushottam Singh of B.H.U. and Sohgaura, excavated by Shailnath Chaturvedi of Gorakhpur University, both in District Gorakhpur and at Khairadih (Distt. Ballia), excavated by K.K. Sinha of B.H.U. This ware is also typical of the Chalcolithic culture at Chirand in Bihar, dated by C14 to 1650 B.C.

PGW is a fine grey-coloured ceramic, bearing simple designs painted in black. More than 650 sites of this ware are known with its thickest concentration in the Ganga-Yamuna Doab and a scatter in Harayana, Punjab and Rajasthan and as far west as the Hakra-bed in Bahawalpur (Pakistan). The typical PGW does not occur east of Sravasti, though B.B. Lal affirms its scarce occurrence at Srinagaverapur. Initially discovered at Ahichhatra, its seminal significance as a protohistoric culture was first recognized at Hastinapur.

Stratigraphically PGW occurs in four contenxts. At Alamgirpur and Hulas in west U.P. (also at Ropar and Sanghol in Punjab and Daulatpur in Haryana) it is preceded by the Late Harappan culture with gap between the two cultures, while at some other sites in Punjab and Haryana, such as Bhagwanpura, excavated by J.P. Joshi of ASI, it is interlocked with the late Harappa. At Ahichhatra and Hastinapur PGW is preceded by OCW, while at Atranjikhera (also at Noh and Jodhpura in Rajasthan), it is preceded by black-and-red ware. At most other PGW sites, the ware overlaps with or antedates NBPW, such as at Allahpur, Kanauj, Mathura and Sravasti, excavated by ASI, Hulas Khera, excavated by State Deptt. of Archaeology and sonkh excavated by a German team led by Hartel.

Most PGW sites in U.P. and some in east Rajasthan, like Noh and Jodhpura, have yielded iron alongside copper, while the sites in Haryana, Punjab, and a few also in Rajasthan pertain to pre-iron stage. Iron furnaces are known from Atranjikhera which has yielded a variety of iron objects like sickles, arrowheads, spearheads, daggers, nails, an axe and a pair of tongs. Other objects associated with PGW are terracotta discs and animal figurines of horse and bull, and beads of agate and Jasper. Glass bangles from Hastinapur, a gaming die of bone with markings from Alamgirpur, and terracotta human figurines from Jakhera are other notable finds.

The PGW culture was a village culture with agriculture-cum-pastoral base and the dietary included wheat and pulses, besides rice and barley. On the evidence of C14 dates from Atranjikhera this culture is datable between 1200-800 B.C. which may be moderated as circa 1000-600 B.C.

NBPW datable 600-100 B.C., has been traced in more than 1500 sites, spread over the entire Indian sub-continent (except the extreme south), with largest concentration in the Gangetic plains of U.P. and Bihar. The culture associated with this ware ushered in the Second Urbanization in India, characterized by extensive use of iron, baked brick structure, growth of agriculture and crafts, and stable state administration assuring peace and all round prosperity. The period was marked by introduction of coinage and Brahmi script, multiple technological inventions, growth of trade and commerce, social stratification on the basis of professional specialization, beginning of art and architecture including town-plan and expansion of Buddhism. The period witnessed growth of cities, some fortified from the time of foundation and others later. The period also marked establishment of large kingdoms which culminated during 4th-3rd centuries B.C. in the rise of Mauryan empire that led to cultural efflorescence and pan-Indian standardization of arts and crafts.

It is indeed significant that practically all ancient sites in the Gangetic plain bear NBPW deposits and these are often quite thick and divisible into phases due to variations in the fabric of the ware and other associated objects. Thus at Rajghat (Kashi) and the neighbouring site of Prahladpur, both excavated by B.H.U., and at Masaon (Distt. Ghazipur), the earliest phase is devoid of NBPW and dominated by black-and-red and black-slipped wares, the middle phase displays fine NBPW, while the quality of this ware declines in the last phase. The same story is repeated at Ranihat (Distt. Tehri) excavated by K.P. Nautiyal of the Garhwal University. Some Archaeologists are therefore getting inclined to the view that the Black-slipped ware is the most crucial pottery and NBPW is only its culmination. However NBPW is the hallmark and found in prolific to fair quantity at all ancient city sites like Hastinapur, Ahichhatra, Kausambi, Mathura, Kashi and Kanauj.

The historical cultures succeeding the NBPW and traditionally known by the dynastic appellation of Sunga, Kushana and Gupta are characterized by greater economic prosperity brought about by agricultural surplus and further growth of trade and commerce and reflected in all round refinement in the technique of arts and crafts like coinage, jewellary and plastic arts between the 2nd and 6th centuries A.D.

A healthy trend in recent years has been the conduct of horizontal excavation which alone provides a complete picture of the town plan, subsistances pattern and way of living. Among examples come to mind the adjoining sites of Piprahwa and Ganwaria on the Indo-Nepal border excavated by K.M. Srivastava of ASI. While the former site with the relic stupa of the Buddha and several monasteries represent, the religious sector of the ancient town of Kapilavastu on the testimony of numerous inscribed sealings, the latter with its massive remains of buildings has been inferred by the excavator as the palace complex of king Suddhodana. Khairadih, excavated by K.K. Sinha of B.H.U. and Hulas Khera, excavated by the State Deptt. of Archaeology provide other examples of horizontal operations presenting a view of the Kushana town-plan with long arterial streets. The former site reveals in the Kushana strata rich evidence of iron furnaces while the latter has yielded a unique image of Kartikeya in gold repousse.

A welcome recent event which **angurs** well for the development of the neglected field of Medieval archaeology has been the large scale survey and excavations of Akbar's capital town Fatehpur Sikri, jointly conductd by Aligarh Muslim University and ASI.

Another welcome trend is the attention paid in recent years to archaeological activities in the hitherto scarcely explored region of Uttarakhanda through excavations by the Garhwal University under leadership of K.P. Nautiyal et.al. at a number of early historical sites including Thapli (Distt. Tehri) going back to the PGW culture as well as through exploratory survey of hundreds of old temples and images undertaken by the State Deptt. of Archaeology, led by Rakesh Tewari and his colleagues. The State Deptt. has been quick in publishing the results of these surveys through small and large monographs.

Lastly, we may review the results of the efforts made in recent years to test the literary tradition of the epics on the touch stone of archaeology.

While the Mahabharata Project conceived by B.B. Lal and initiated with his Hastinapur excavation yielded results acceptable to most historians and archaeologists the results of his much publicized Ramayana Project have dismayed most historians and traditional scholars and are haltingly accepted by few archaeologists including Mr. Lal himself. The common denomination of the Ramayana sites at Ayodhya, Nandigram, Bharadvaja Ashram, Chitrakuta and Sringaverapur is their lowest horizon yielding NBPW whose date can not be stretched earlier than 700 B.C. It is indeed difficult for a traditional Indian to believe that Krishna is earlier than Rama since the Puranic genealogical lists place Rama 29 generations before Yudhishthira, Krishna's contemporary. Was the Ramayana story then a mere figment of poetic imagination? Or have the Ramayana sites or strata completely disappeared? A satisfactory answer is yet to come from future researches, either archaeological or textual.

Sringaverapura, jointly excavated by B.B. Lal and K.N. Dikshit of ASI, reveals cultural deposits going back to C. 1000 B.C. and has yielded in layers dating between 100 B.C. and A.D. 100, a 250 metre long massive brick-tank with a feeding channel connected with the Ganga, silting chambers, 'horizontal and vertical worpings', and a waste weir, a unique ancient achievement indeed of hydraulic engineering of which India may well be proud.

I have surveyed briefly the main archaeological achievements, effected up to date in U.P. through cooperation among Central and State Govt. agencies, Universties, individual archaeologists, scientits and historians, and the Scientific Laboratories like Physical Research laboratory, Ahmedabad, Birbal Sahni Research Institute of Palaeobotany, Lucknow and National Research Laboratory for Conservation of Cultural Property, Lucknow. The names cited here are more illustrative than exhaustive.

While efforts should not be relaxed to explore historical cultures of all periods, ancient and medieval, we should aim at horizontal excavations of Prehistoric cultures wherein lie the key to the solution of problems relating to the diffusion of Harappa culture, so called Aryan expansion in the East and the voracity of Epic traditions, and most important, preparation for the second Urbanization. I recommend large scale horizontal excavation at Khalaua, Jakhera and Kanauj, sites in U.P. with a thrust on exploring the PGW Strata.

## REFERENCES

1.. **Manusmriti**, II, pp. 19-21.

2. Abul Fazal, **Aine-e-akbari**, Calcutta 1898, p. 320.

3. **Satpatha Brahmana** 1.4. 14-16

4. Cunningham, **Archaeological Survey Reports**, Vols. I-XXIII.

5.**Ancient India**, No. 7

6. **Ancient India**, No's. 10-11.

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# LOWER AND MIDDLE PALAEOLITHIC INDUSTRIES OF UTTAR PRADESH — A REAPRAISAL

**P.C. Pant**

Southern part of Uttar Pradesh comprising parts of Varanasi, Mirzapur, Sonbhadra, Allahabad, Banda, Hamirpur, Jhansi and Lalitpur districts is indeed a potential area for palaeolithic researches . Although some sporadic finds of palaeolithic implements have also been claimed from both Garhwal and Kumaon divisions, the hilly tracts of southern Uttar Pradesh still remain the treasure house of palaeolithic cultures of all the three phases.

## HISTORY OF RESEARCH

The credit for emphasising the potentialities of southern Uttar Pradesh for palaeolithic research goes to three British officers viz., Rivett-Carnac, who found a large quantity of flint flakes in Banda district(1884)[1], Carlleyle, whose investigations in Mirzapur district and Baghelkhand and Bundelkhand divisions resulted in the discovery of various painted 'caves' along with stone implements (1883)[2] and Cockburn, who explored various parts of the Kaimur range including Mirzapur district and located a very rich lower palaeolithic site in stratified deposits in the Singrauli basin of Mirzapur district (now falling in Sonbhadra district)(1888 and 1894)[3]. All these discoveries were made in the later half of the 19th century but they remained almost unnoticed till 1949 when a team of prehistorians under F.E. Zeuner re-examined the sites of the Singrauli basin. The results of these investigagtions were subsequently published by Krishnaswami and Soundara Rajan[4]. Since the Lower Palaeolithic industry of the Singrauli basin contained 15% pebble-tools along with imlplements of Acheulian facies, a hypothesis was put forward that the region was a meeting ground of the Soan culture of the north and the Madras culture of Peninsular India. The view was undoubtedly based upon the observations of the Yale-Cambridge expedition. However, the subsequent researches demonstrated that such a hypothesis as the above one is hardly tenable.

In the subsequent years, the Allahabad University under Late Prof. G.R. Sharma (1955-56, 1966-67, etc.)[5] and the Banaras Hindu University under the present author[6], were mainly reponsible for carrying out investigations in southern Uttar Pradesh. Besides, Remeshwar Singh of the Deccan College, Pune (1965)[7], and R.V. Joshi of the prehistory branch of the Archaeological Survey of India (1963-64)[8], investigated parts of Bundelkhand, mainly between the rivers Betwa and Dhasan. All these investigations not only revealed a large number of Lower and Middle Palaeolithic sites in different parts of southern Uttar Pradesh, but also succeeded in locating important river sections particularly on the rivers Son, Belan and its tributaries and Shahzad. They enabled the researchers to fix a sequence among the cultures and to derive some significant conclusions about the probable palaeo-environments associated with them.

## THE LOWER PALAEOLITHIC

The Lower Palaeolithic industries of Uttar Pradesh fall under two categoris-the pebble-tool complex and the Acheulian industries. The former is represented by only 3 sites viz., Lahchura on the Dhasan, situated on the tri-junction of Jhansi and Hamirpur districts of Uttar Pradesh and Chhatarpur district of Madhya Pradesh, Belharka on the Ken river in Banda district and Bangawan on the Betwa river situated near the border between Jhansi and Chhatarpur districts[9]. Among these three, the first named site proved to be exceptionally rich in tool content. Unfortunately, at none of these sites, the artefacts occured in stratified deposits, and thus the pebble-tool complex of Uttar

Pradesh is still wanting in stratigraphical confirmation. The industries found from these sites are characterised by very high proportion of pebble choppers (55% to 85%) followed by chopping tools (nearly 13%). Flakes invariably struck from pebble and tools made on them do occur, but their percentage is always very low (Fig. 1).

Although sporadic occurrence of Acheulian implements has been reported from various parts of southern Uttar Pradesh, the four potential areas from where rich industries have been found in stratigraphic context are the Singrauli basin in Sonbhadra district, the Belan valley in the Mirzapur and Allahabad districts, the Bardaha valley in the southern part of the Banda district and the Shahzad and the Betwa valleys in Lalitpur district. Everywhere tools are associated with a thick boulder-cobble deposit, mostly found resting on the bedrock. It may be noted, however, that in the Belan section, this deposit has undergone severe erosion and is rarely found in situ, while in all the other areas, the evidence for erosional activity is almost unnoticed. With reference to the Belan valley, Dassarma and Biswas have opined that the deposit appears to be, at least partly, of solifluction origin[10]. According to them the whole deposit was formed during a cold glacial phase. While Mazumdar and Rajguru think that the deposit was made through fluvial process[11], G.R. Sharma thought that it was formed during a wet climatic phase[12]. This author has dealt with the question of interpreting the Belan section in detail elsewhere[13]. Suffice is to say that considering the totality of the evidence, the boulder cobble deposit was formed during dry climatic conditions of a wet and dry climatic cycle.

The Acheulian industries of southern Uttar Pradesh appear in two contexts. First, they occur in river deposits and/or beds. Second, there are factory sites, mostly located on small hillocks, being projections of large hill slopes. Although the sites of the second category occure in most of the regions, they are abundant only in the Belan valley. Techno-typologically, they share general characteristics of the Acheulian industries found elsewhere (Fig. 2). Hand axes and cleavers occur in all the regions; but the percentage of the first named implement is larger in the Singrauli basin and Lalitpur industries than those of the other areas. Conversely, the cleavers generally occur in larger percentage and variety in the Belan valley industries. Pebble-tools occur in most of the industies, but their proportion is generally small to negligible in those of the Belan valley. However, the most striking feature of the Acheulian industries of the Belan valley as well as Banda district is the general massiveness of the artefacts, which distinguishes them from those of the Singrauli basin and Lalitpur. It is also important to note that the associated tools in the first group of industries do not show the variety and neat retouch, noticed in the industries of the Singrauli basin and Lalitpur. However, as far as the blank-detaching technique is concenred, it is mostly Levallois and Proto-Levallois everywhere.

## THE MIDDLE PALAEOLITHIC

Like the earlier phase, the Middle Palaeolithic also has two sets of industries, viz., those of the peninsular facies and one pebble-tool industry from Lahchura, forming a group by itself.

A surface collection, the Lahachura industry, assignable to the Middle Palaeolithic phase is certainly more evolved than that of the earlier phase. Taking into consideration all its techno-typological characteristics, it can be unhesitatingly said that the industry had achieved the Mousterian level. It is characterised by the occurrence of a good number of choppers (27.2%) and chopping tools (2.9%), but various flake tools, mostly struck form pebbles, far outnumber them. They include different types of side scrapers (28.2%), notches (7.8%), denticulates (5.8%), some burins (4%), partially retouched flakes (15.6%), etc.

It may be recalled that the Yale-Cambridge expedition[14], divided their Late Soan industries into two viz., Late Soan A and B, which differ mainly on account of their technological features. The Lahachura industry appears to share many characteristics of the Late Soan A. If the study published by Paterson and Drummond is taken into consideration, the Lahchura industry exhibits some affinity with their Upper Soan A. Among the 120 artefcats from Ghila Khan, the richest industry of the phase".....about 1/3 are flakes, 1/3 cores and a third (1/3)

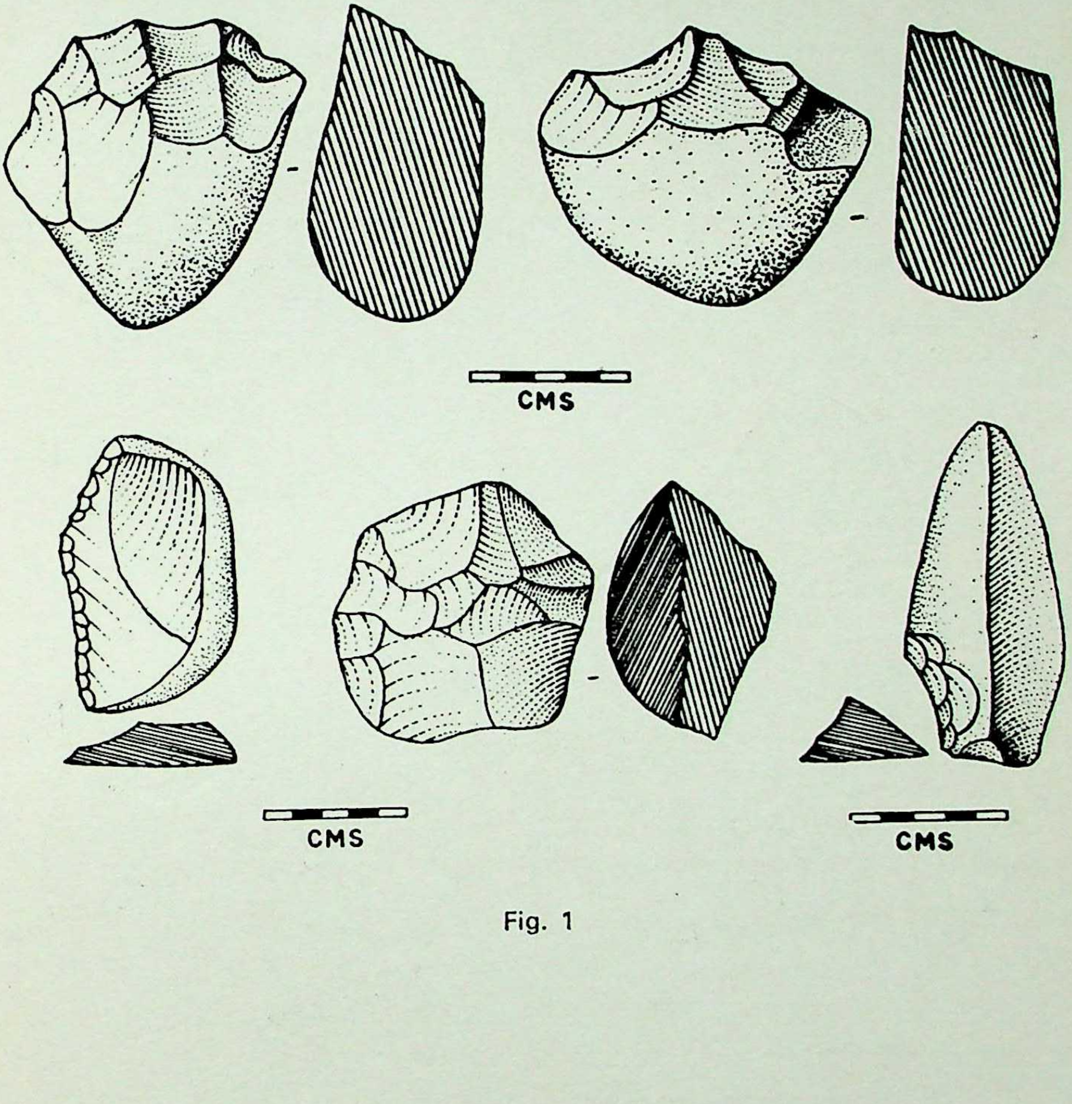


Fig. 1

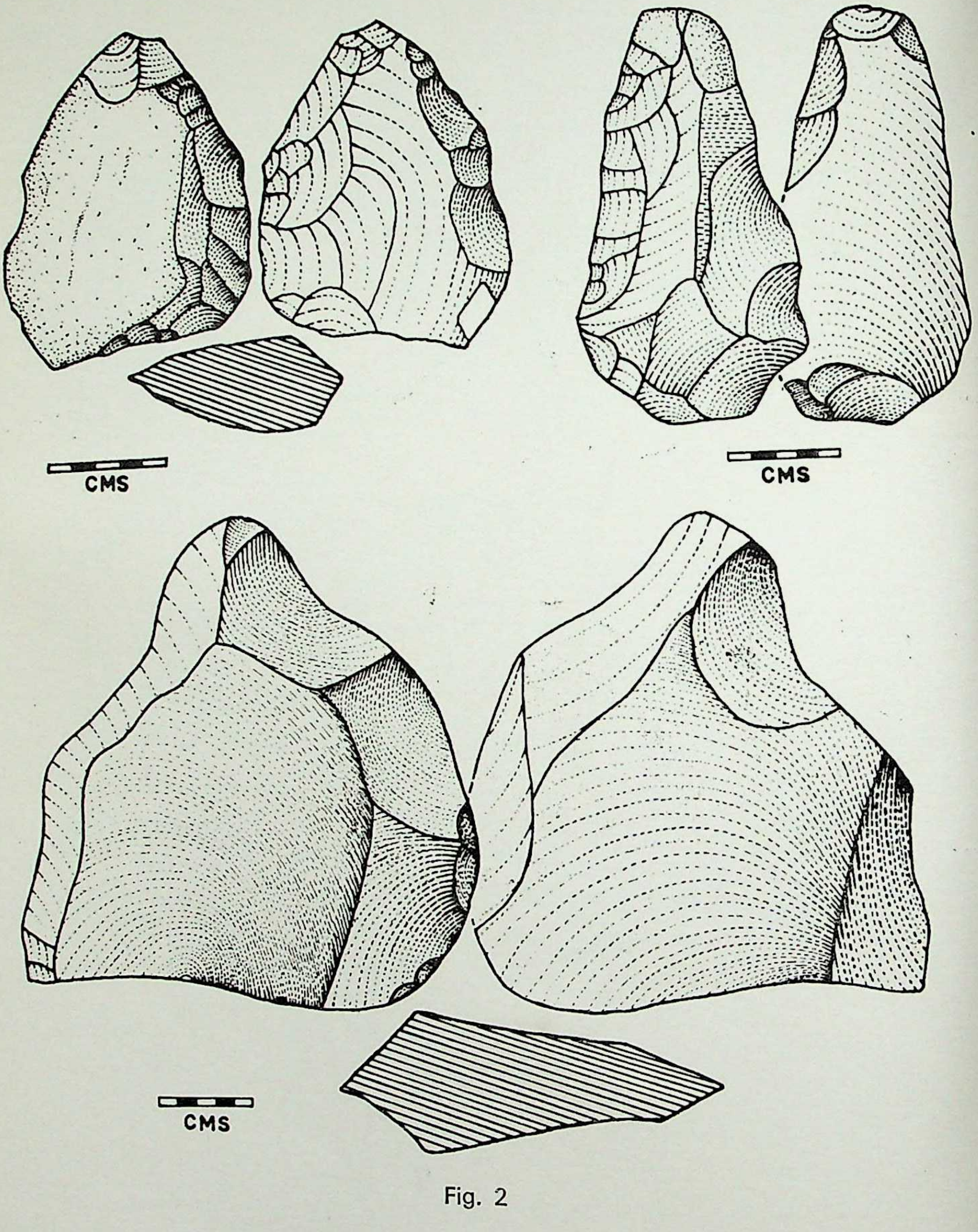


Fig. 2

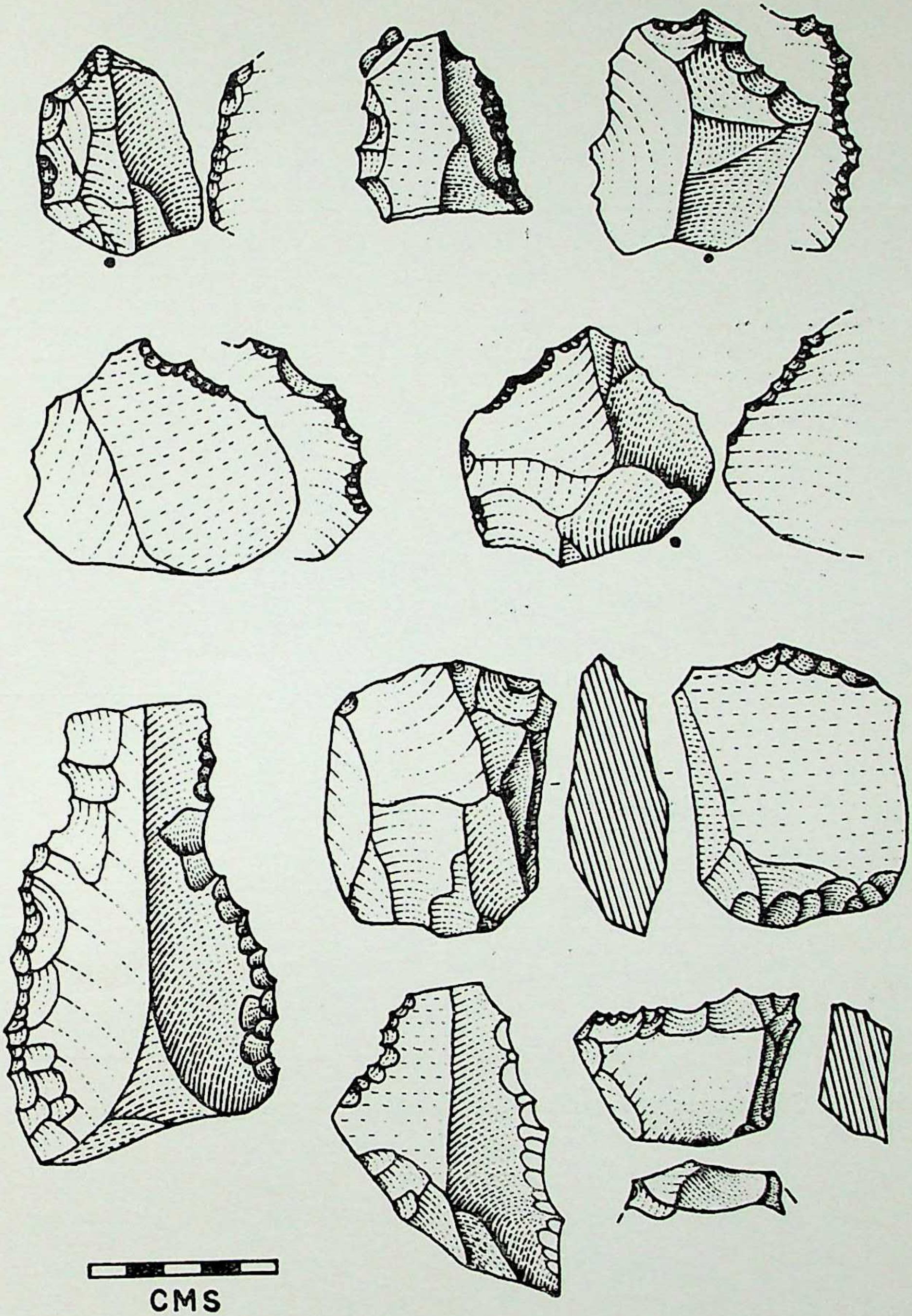
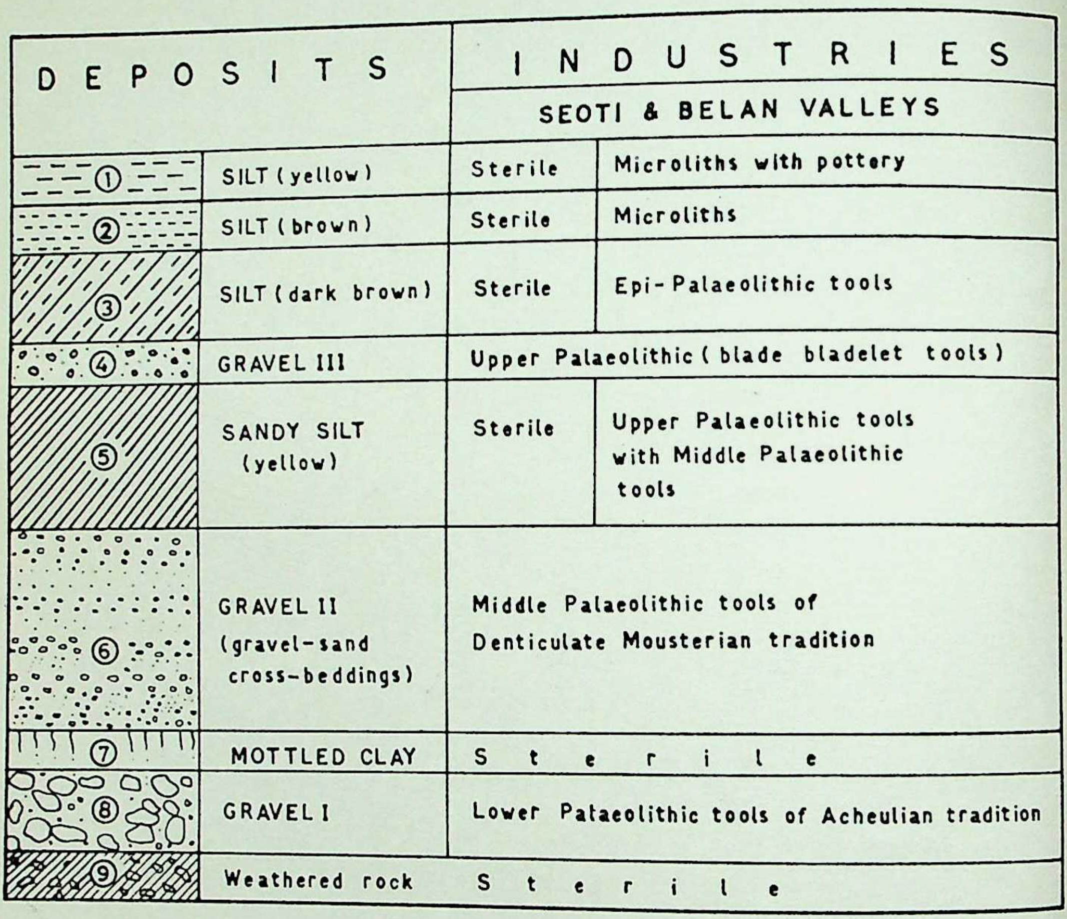


Fig. 3



| DEPOSITS | | INDUSTRIES | |
|---|---|---|---|
| | | SEOTI & BELAN VALLEYS | |
| ① | SILT (yellow) | Sterile | Microliths with pottery |
| ② | SILT (brown) | Sterile | Microliths |
| ③ | SILT (dark brown) | Sterile | Epi-Palaeolithic tools |
| ④ | GRAVEL III | Upper Palaeolithic (blade bladelet tools) | |
| ⑤ | SANDY SILT (yellow) | Sterile | Upper Palaeolithic tools with Middle Palaeolithic tools |
| ⑥ | GRAVEL II (gravel–sand cross–beddings) | Middle Palaeolithic tools of Denticulate Mousterian tradition | |
| ⑦ | MOTTLED CLAY | Sterile | |
| ⑧ | GRAVEL I | Lower Pataeolithic tools of Acheulian tradition | |
| ⑨ | Weathered rock | Sterile | |

Fig. 4 Schematic section of the Seoti and Belan geology and archaeology

Soan type tools"[15]. From the point of view of technique also, there is a marked similarity between the two. The Levallois element is well represented in both and the unprepared and partly prepared flakes form the majority. However, some tool types of Lahchura like denticulates, knives, convergent scrapers, burins and blades appear to be absent in the Ghila Khan industry.

Similarly, our industry seems to be in general agreement with that of the Sirsa valley in Himachal Pradesh, found by Mohapatra[16]. It needs to be emphasised, however, that the Lahchura industry does not agree with the above industries point by point. But the distinctions are not vital and they may always occur among various industries of the same tradition.

The implements of the Middle Palaeolithic phase of peninsular facies have been found sporadically from generally well cemented thick gravel-sand deposits, often cross-bedded, of the Son, the Belan, the Ken, the Betwa, the Dhasan and a number of smaller streams. However, rich industries worthy of detailed techno-typoligical screening come from numerous factory sites, mostly found in the Belan valley. It may be recalled that in the Middle Palaeolithic industries of peninsular India, the chief raw material is crypto-crystalline silica and quartzite has been rarely used. In southern Uttar Pradesh also, crypto-crystalline silica is the principal raw material among the industries found in river deposits or beds. But the Belan valley presents a somewhat different picture. Here the implements found in the river sections are made of both crypto-crystalline silica and quartzite, but in the industries found from factory sites, the artefacts are made of only the latter raw material.

The thick cross-bedded gravel-sand deposit of the Belan and its tributary, the Seoti, has been interpreted as representing a wet climatic phase by G.R. Sharma[17]. On the other hand, Dassarma and Biswas consider this aggradation a result of relative aridity[18]. The present author is in full agreement with the latter view. The cross- bedding of the deposit suggests that it was a chanel deposit.

The techno-typological features of the Middle Palaeolithic industries of peninsular facies found from the numerous factory sites of southern Uttar Pradesh (fig. 3), may be summarised as follows. Various denticulated and notched tools (25% to 35%) and a good number of side scrapers (about 30%) appear to be the main tool types. Besides these, there is a small number of some end scrapers, burins and knives in certain industries. It may be noted, however, that the side scrapers are of mediocre quality, mostly devoid of neat, regular retouch. None of them contains the typical Quina retouch. Similarly, typical Mousterian points, typical borers and discoidal cores are also not present. The Levallois technique is well represented. In our opinion, these industries of southern Uttar Pradesh represent Indian version of the Dentevlate-Mousterian[19].

If one looks at the above techno-typological features of the Middle Palaeolithic industries of Uttar Pradesh, it may be difficult to find points of agreement between them and those of peninsular India, which are said to be characterised by scrapers, points, borers and occasional handaxes and choppers[20]. Sankalia also abserved that "we cannot say definitely that the full Levallois technique was known or employed in the manufacture of flakes"[21]-. However, Jayaswal's study indicates that the Levallois element is present in varying proportions even in the Middle Palaeolithic industries of peninsular India, particularly among those where the raw material is quartzite[22].

G.R. Sharma postulated a continuous sequence of cultures in the Belan valley start from the Acheulian to the upper Palaeolithic and later, with various stages of evolution[23]. His assertion that the proposed unilinear evolution of cultures is supported by stratigraphical evidence is, however, not confirmed by our investigation in the region.

## PROBLEMS OF STUDY

The above review of the Lower and Middle Palaeolithic industries of Uttar Pradesh demonstrates that no research worthy of note has been undertaken in the region during the last decade or so, except a few sporadic discoveries of artefacts of the two phases. The studies carried out so far are limited to a loose sequence of the Lower and Middle Palaeolithic industries but without any reliable Chronological data, a tentative and hazy picture of the environmental conditions associated with them, and fairly exhaustive techno-typological screening of the assemblages. However, several basic problems are yet to be tackled, some of which are briefly mentioned below:

1. What are the precise stratigraphical horizons of the two sets of pebble-tool industries? Unless we find reliable data of their stratigraphical position in relation to the known Lower and Middle Palaeolithic industries, the lables of Lower and Middle Palaeolithic given to them, even if tentatively, are indeed questionable.

2. How do we date various industries? Even the 14c dates of the Upper Palaeolithic of the Belan valley ar also not beyond doubt, since they are based on samples of fresh water shells which can be easily impregnated by calcium carbonate. No doubt, a good amount of mammalian fossil-fauna has been recovered from the deposits of the Belan, associated with the Lower and Middle Palaeolithic industries. But the evidence is hardly sufficient either to reconstruct palaeo- environments or to fix chronology, in view of the fact that most of the species seemed to have survived for a long time, from the Middle Pleistocene to the end of the Pleistocene.

3. What were the prevailing environmental conditions when cultures of various phases existed? It should be borne in mind that river deposits, particularly of a country like India which is characterised by monsoon climate, have their own limitations and are indeed difficult to interpret.

4. Why did the Lower and Middle Palaeolithic man did not occupy any rock-shelters, when hundreds of them exist in the region, particularly in Sonbhadra, Mirzapur and Banda districts? Were

there any environmental and ecological factors which prompted him not to do so? A probable explanation can be that rock-shelters were formed after the end of the Middle Palaeolithic phase, when the region experienced extreme aridity for a considerably long time, as reflected by a thick deposit of yellow sandy silt with calcium cabronate concretion and having a pH. value as high as 10.5, overlying the gravel-sand deposit. The suggestion is indeed tentative and needs further corroboration.

5. And finally, the basic question at which our researches should normally aim-what was the way of life of the people who were responsible for various stone industries? How did they interact with the surrounding natural environment?

## FUTURE RESEARCH

Needless to say that all the above and other problems have to be kept in mind while planning future researches in Lower and Middle Palaeolithic Archaeology. The researches carried out so far can help us identifyying most potential areas where intensive and well planned field investigations can be undertaken. In the opinion of this author, there are four such potential regions, viz. the Belan valley, the area lying south of Manikpur in Banda district, the hilly tracts around Lahchura and their vicinity, and the region lying between the Betwa and the Shahzad rivers in Lalitpur district. Obviously, the aim of the future field work has to be to locate habitational sites from where all the evidence relating to natural environment, cultural contents and chronology can be excavated with the help of various inter- disciplinary scientific methods. This cannot be achieved without the active participation and help of various experts from the very initial stage of research. Cooperation can be sought from different Government and University departments specialising in the study of various aspects of geo-chronology and Paleo-environment.

## REFERENCES

1. Rivett-Carnac, H., 1884 'Collection of Stone Implements from Banda', **Journal of the Anthropological Institute**, vol. XIII, pp. 119- 20.

2. Carlleyle, A.C.L. 1883, 'Notes on Lately Discovered Sepulchral Mounds, Cairns, Caves, Cave-paintings and Stone Implements', **Proceedings of The Asiatic Society of Bengal**, p. 49.

3. Cockburn, J. 1888 'On Palaeolithic Implements from The Drift- gravels of the Singrauli Basin, South Mirzapur', **Journal of the Anthropological Institute**, vol. XVII, pp. 57-65.

1894, 'On Flint Implements from The Kon Ravines of South Mirzapur', **Journal of the Asiatic Society of Bengal**, vol. LXIII, pp. 21-27.

4. Krishnaswami, V.D. and Soundarrajan, K.V. 1951 'The Lithic Tool- industries of the Singrauli Basin, District Mirzapur', **Ancient India**, No. 7, pp. 40-65.

5. **Indian Archaeology** 1955-56 : A Review, Archaeological Survey of India, Janpath, New Delhi

Ibid, 1966-67 pp. 35-37, etc.

6. Pant, P.C. 1982 **Prehistoric Uttar Pradesh**, Agam Kala Prakashan, 34, Community Centre, Ashok Vihar, Phase I, Delhi-110052.

7. Singh, Rameshwar 1965 **Palaeolithic Industries of Northern Bundelkhand**, unpublished Ph.D. Thesis, Poona.

8. **Indian Archaeology** **1963-64 : A Review**, pp. 49-51.

9. Pant, op. cit., pp. 39-48

10. Dassaram, D.C. and Biswas, S. 1976 'Quaternary D posits of the Belan-Seoti Valleys, Allahabad District, U.P., **F oceedings of the VI Inian Colloquin on Micropalaeontc y and Stratigraphy**, (ed. Srinivasan, M.S.), Varanasi.

11. Majumdar, G.G. and Rajguru, S.N., 1970 'Invest ons of the Pleistocene Sediments from The Belan V U.P.', **Indian Antiquary** (Third Series), vol. IV, pp. 96-10

12. Sharma, G.R. 1973 Stone Age in the Vindhyas and the Ganga Valley, **Radiocarbon and Indian Archaeology,** (ed. Agrawal, D.P. and Ghosh, A.)

13. Pant op.cit. , pp.18-28.

14. De Terra, H. and Paterson, T.T. 1939 **Studies on the Ice Age in India and Associated Human Cultures**, Washington.

15. Paterson, T.T. and Drummond, H.J.H., 1962 Soan the Palaeolothic of Pakistan, **Memoirs of the Department of Archaeology**, Pakistan, No. 2, Karachi.

16. Mohapatra, G.C. 1974 Lithic Industries of Himachal Pradesh, **Perspectives in Palaeoanthropology** : D. Sen Festschrift, (ed. Ghosh, A.K.), Calcutta, pp. 199-212.

17. Sharma op. cit. pp. 107-8.

18. Dassaram op. cit, pp. 33-39.

19. C/f. Bordes, F. & Sonneville-Bordes, D. de, 1970 'The Significance of Variability in Palaeolithic Assemblages, **World Archaeology,** vol. 2, No. 1, pp. 61-73;

Bordes, F. 1972 **The Tale of Two Caves,** New York p. 124, ff., etc.

20. For details, Sankalia, H.D. 1974 **Prehistory and Protohistory** of India and Pakistan, new Edition, Poona, p. 149.

21. Ibid, p. 148.

22. Jayaswal, Vidula 1978 **Palaeohistory of India**, Delhi.

23. Sharma op. cit. pp. 106-110.

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# UPPER PALAEOLITHIC CULTURES OF UTTAR PRADESH

**Vidula Jayaswal**

Stone-Age studies carried out in Uttar Pradesh in the past two decades have not only brought to light positive evidence for the Upper Palaeolithic stage in India, but have also provided a reliable archaeological base to the lithic cultural sequence. The evidence for a complete and continuous history of the various Stone-Age cultures is remarkably well preserved in this area, a feature rarely found in other parts of the Indian subcontinent. In this paper it is proposed to summarize the available evidence pertaining to the Upper Palaeolithic Period of Uttar Pradesh (lying between the time bracket of c.22,000 and 14,000 B.P.). While doing so, an attempt is also made to highlighting some of the basic issues relating to the settlement pattern and habitational tendencies of the Upper Palaeolithic man of this region. Besides, some of the enquiries which may give direction to the meaningful researches to be carried on in future, have also been discussed.

## I

## HISTORY OF RESEARCHES

The archaeological potential of the southern part of Uttar Pradesh has been brought to light by the investigations of two main research teams-those of the Allahabad University and the Banaras Hindu University. The former, under the leadership of G.R. Sharma, carried out exploration of the Banda, Mirzapur, and Allahabad districts and the excavation of a few sites in the 1960s and 1970s[1]. P.C. Pant of the Banaras Hindu University, also undertook fresh-field investigations in almost the same area, first in 1961-64 and later between 1968 and 1976. The present author participated in the latter field trip and also conducted excavations at two rock shelters in 1978[2]. The following discussions are based on the reports of Sharma[3] and Pant[4] and also this author's own field observations .

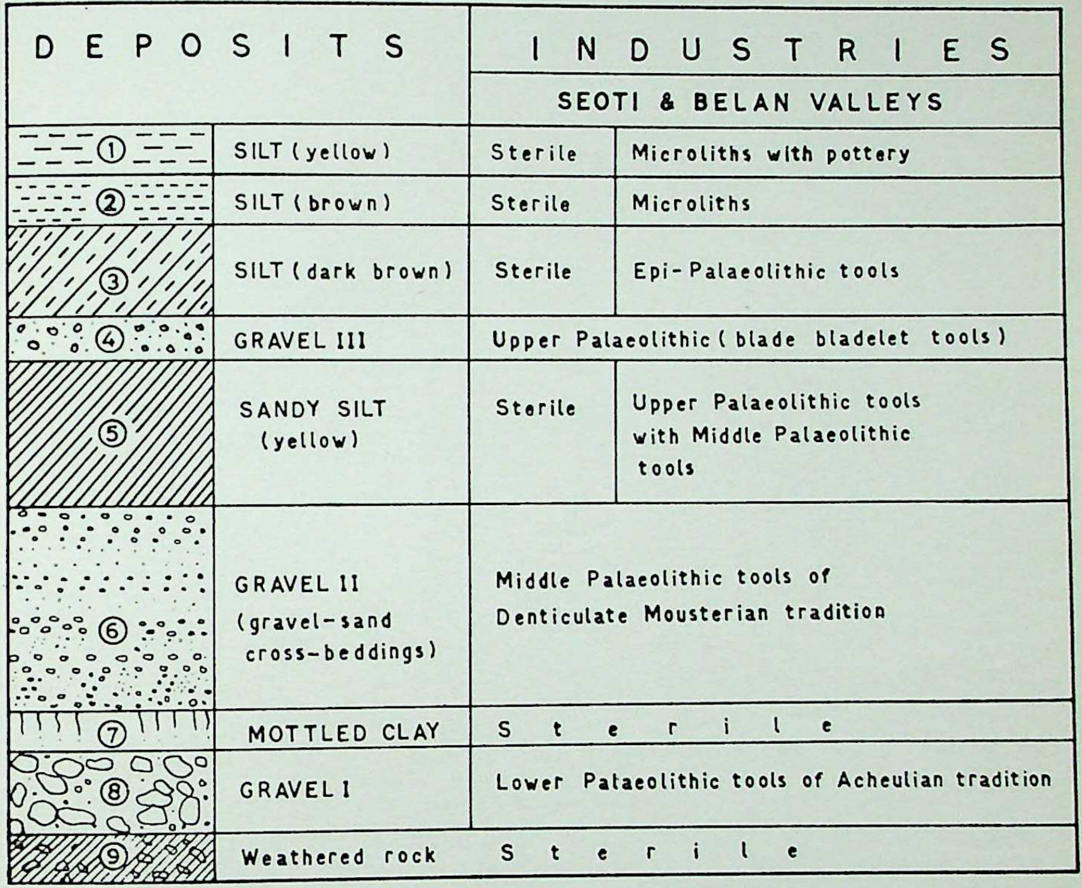
## II

## GEO-CHRONOLOGICAL EVIDENCE

The Quaternary stratigraphy of the region is best preserved along the banks of the rivers Belan and Seoti. These belong to the Ganga-Yamuna Plains and the Vindhyan formations of the adjoining hills of Allahabad and Mirzapur districts. Since none of these rivers joins the ocean directly, the changes in the sea-levels would have hardly influenced the nature of the river deposits in this area. Consequently, the river sediments, which are found in the forms of alternating layers of gravels of different sizes, silts and clays, are considered to represent regional climatic fluctuations. These deposits, divided into units, contain the lithic artefacts of various facies ranging from Acheulian to the Mesolithic times.

The Upper Palaeolithic industries of the Belan-Seoti valley are clearly distinguished from the others in this impressive culture sequence (Fig.1). Unlike the earlier cultures, the industries of this phase can be dated with some amount of precision.

There are two radio-carbon dates c.25,790 B.P. (PRL 86) and 19,715 B.P. (TF 1245) for the Gravel III deposit (layer 4 of the schematic sequence), that yielded the earliest Upper Palaeolithic Industry. This is predominantly a blade industry of the Upper Palaeolithic tradition. The dates indicate that the Gravel III was being formed between c.25,000 and 19,000/ 18,000 B.P. The succeeding



| DEPOSITS | | INDUSTRIES | |
|---|---|---|---|
| | | SEOTI & BELAN VALLEYS | |
| ① | SILT (yellow) | Sterile | Microliths with pottery |
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| ⑦ | MOTTLED CLAY | Sterile | |
| ⑧ | GRAVEL I | Lower Palaeolithic tools of Acheulian tradition | |
| ⑨ | Weathered rock | Sterile | |

Fig. 1 Schematic section of the Seoti and Belan geology and archaeology (after Pant 1982)

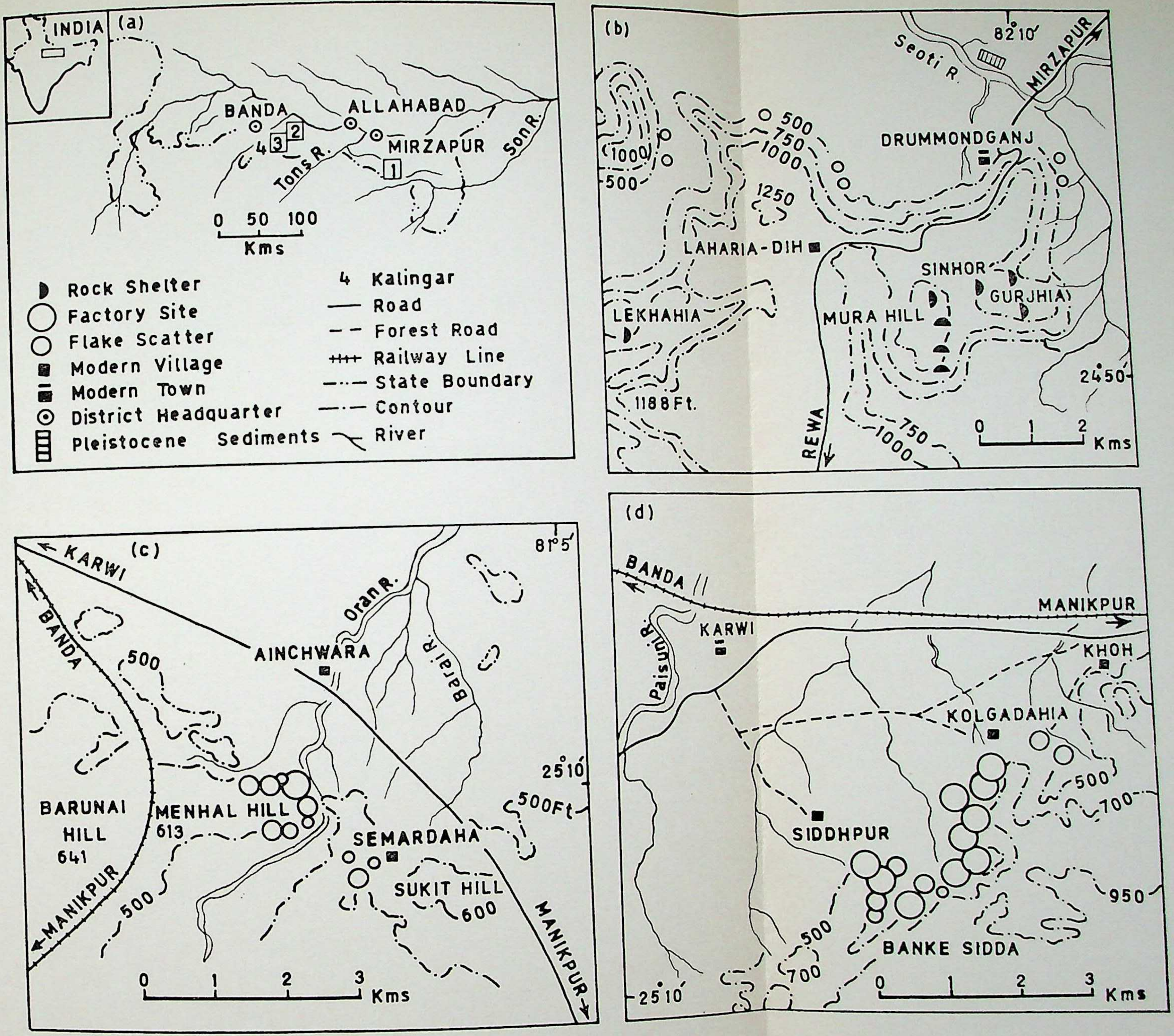
(a)
INDIA
BANDA
ALLAHABAD
MIRZAPUR
Son R.
Tons R.
4
3
2
1
0 50 100
Kms
Rock Shelter
Factory Site
Flake Scatter
Modern Village
Modern Town
District Headquarter
Pleistocene Sediments
4 Kalingar
Road
Forest Road
Railway Line
State Boundary
Contour
River
(b)
82°10′
Seoti R.
MIRZAPUR
DRUMMONDGANJ
500
750
1000
1000
500
1250
LAHARIA-DIH
SINHOR
GURJHIA
MURA HILL
LEKHAHIA
1188 Ft.
REWA
750
1000
2450
0 1 2
Kms
(c)
81°5′
KARWI
BANDA
Oran R.
Baraí R.
AINCHWARA
500
25°10′
500Ft
BARUNAI HILL 641
MENHAL HILL 613
SEMARDAHA
SUKIT HILL
600
500
MANIKPUR
MANIKPUR
0 1 2 3
Kms
(d)
BANDA
MANIKPUR
Paisuni R.
KARWI
KHOH
KOLGADAHIA
500
700
SIDDHPUR
950
BANKE SIDDA
500
700
25°10′
0 1 2 3
Kms

Fig. 2

period, which witnessed the formation of the 'blackish humus soil' (layer 3) lies directly above the Gravel III. Since it directly follows the earlier deposits with Upper Palaeolithic industry, it also falls within the scope of the present study. The cultural remains obtained from the 'black humus soil' show continuity with an Upper Palaeolithic type blade industry associated with non-geometric microliths. This association suggests a transition from the Palaeolithic to the Mesolithic mode of life[5]. Elsewhere we have argued that a small proportion of bladelets and microliths forms an integral part of even the earliest Upper Palaeolithic tool-kit in this area[6]. The basic difference between the two assemblages from the gravel III and the overlying soil, lies in the marked proportional increase of bladelets and microliths. The technotypological observations from these two layers provide a framework for the study of other comparable industries, usually very rich in lithic artefacts. These are found in the same region but in different geographical settings and are devoid of suitable material for absolute dating.

## III

## ARCHAEOLOGICAL EVIDENCE

The archaeological remains of the period (lying between c.22,000 and 14,000 B.P.) under consideration have been found in three different contexts (Fig. 2). Each one of them has a particular geographical setting and throws light on the adaptive ecological behaviour of the contemporary population. These are:

(a) River valley sites,

(b) Open-air factory sites on the hill slopes, and

(c) Rock shelter habitations.

### River Valley Sites

The main localities of this settlement category are found in Gravel III and the succeeding soil layer of the Belan and Seoti rivers. As has bee discussed above, the Gravel III of the Belan-Seoti valley is reported to have yielded a blade industry of the Upper Palaeolithic tradition. This deposit is preserved only sporadically, and hence the implementiferous localities are also limited in number. A remarkably well preserved Gravel III is exposed along the right bank of the Seoti near the village of Daiya in the Allahabad district. This was excavated at a number of places[7] and it was possible to obtain a sizeable collection of Artifacts from this horizon, which are considered to be representative of a wider group of localities. Furthermore, the techno-typological sequence and the geological composition of this horizon are similar to the Gravel III of the Belan valley. The techno-typological details of the Daiya assemblage are presented in Table 1[8]. This shows an important feature of the Upper Palaeolithic tool-kit, where, besides blade and flake elements, bladelets form an important component. Furthermore, microliths, though present only in small proportion form another significant feature.

Comparable techno-typological features are seen in the assemblages associated with the 'blackish humus soil'. However, the frequencies of bladelets and microliths increase in this phase and the micro-gravette point is the diagnostic tool type. The excavated assemblage from this horizon is numerically small and it is not possible to present a detailed techno-typological analysis. The raw materials include various types of cryptocrystalline silica and fine-grained quartzite.

A small bone object claimed to represent a 'mother goddess' figurine was also discovered from the Gravel III[9]. This specimen has also been indentified as a harpoon fragment. It is the only positive evidence of boneworking/art from the Indian Upper Palaeolithic phase.

## Open-Air Factory Sites On Hill Slopes

The southern fringes of the Belan-Seoti valley are formed by the low hill ranges of the Kaimur. Recent fieldwork in these hills in the Mirzapur and Banda districts has discovered numerous lithic workshops[10]. These workshops are located on the gentle hill slopes and the sides of small hillocks. Artefacts, in various stages of manufacture, are scattered in clusters in a number of localities. on the basis of the size and density of the clusters, as well as their techno-typlological features, these localities form two categories :

1. Knapping scatters of small dimensions, and
2. Large-sized workshops

## Small Knapping Scatters

These occur mostly in the Allahabad and Mirzapur districts and are characteristic of the Belan-Seoti valley. Several scatters were discovered by Sharma and Pant in this area, while on the southern slopes of the Kaimur range the main sites are Daiya, Lakhanpur, Mahuackachcha, Orwa, Pahiha, and Mundva[11]. Artefact clusters at these sites are not only small in dimension but are also located at wide intervals. The density and scale of these artefact-scatters are so small that they appear to be short-duration tool-making location probably utilized by very small groups of people. For instance, the largest collections of artefacts, made by the Allahabad team from Mundva (Chanadva), consisted of only 41 finished arefacts, 64 blanks, 5 cores, and 12 unidentifiable artefacts[12]. Techno-typological features of this assemblage correspond with the Daiya assemblage.

A further feature of the artefacts obtained from this group of sites is that more than one type of raw material was utilized for manufacturing implements. Besides chert, which dominates, chalcedony, agate and quartzite are also used in varying proportions. In general there is a scarcity of all types of suitable raw material on the sites. This is shown by the very small amounts of unused raw material and debitage among these scatters. Crypto-crystalline silica is occasionally available in this area in the form of outcropping of veins in the hills. The nearest source for the small nodules and quartzite pebbles appears to be the Son bed, which is 8 to 10 km. away.

## Large-sized Upper Palaeolithic Workshops

These were discovered near the villages of Siddhapur, Ainchwara, and Kalinjar in the Banda district. Located on the slopes of low hills, each locality is drained by small seasonal rivers.

The Siddhapur valley, near the town of Karwi is littered with artefacts made of whitish and buff-coloured cherts. This valley was occupied during both the Middle and Upper Palaeolothic as shown by the excavations in the middle of the valley in 1974[13]. The workshop sites are located on the slopes of the hills that surround the valley. The excavation recovered an assemblage from the lower part of the upper artefact horizon that appears to be latter than the Daiya industry. The proportion of bladelets and non-geometric microliths is higher in the former than the latter. The artefacts from the upper part of this deposit, though made of similar raw material, belong techno- typologically to a still later lithic tradition. The Middle Palaeolithic artefacts occur in a lower gravel separated from the upper implementiferous deposit by a thick accumulation of sandy silt.

There is evidence, therefore, that two facies of artefact manufacture occurred in the Siddhapur valley during the Palaeolithic and that there is no reliable way to separate one from the other from surface collections. Consequently, although extremely rich, this area cannot be fully utilized for he reconstruction of cultural sequences in the Upper Palaeolithic. In spite of this situation, two factors should be noted : first, the profusion in the area of suitable raw material in the form of small and medium-sized chunks, and secondly, the large dimension and dense concentration of the artefacts. Closely spaced, they cover an area approximately 1.5 km. in length along the slopes of several hills. In the vicinity of Ainchwara village, situated about 11 km. south east of Karwi (Fig. 2) evidence has been found for rich Upper Palaeolithic tool manufacturing localities. On the slopes of a hillock on the left bank of the small river Ohan, several thousand artefacts were found in a number of clusters. Each of these artefacts concentrations contained finished tools, primary flakes, cores, lumps of raw materials and debitage[14]. The artefacts are made mostly on chert, but other rocks of finegrained silica were also utilized. From one cluster of approximately 9 square metre 2623 artefacts were collected. The general composition is shown in Table-2 and the detailed typology in Table-3[15]. The industry has a high percentage of retouched artefacts, made in order of preference of flakes, blades, chips, bladelets, and nodules. Retouched chips, numbering 72, are a noteworthy feature of the Ainchwara industry (Fig. 3). In addition, non-geometric microlithic forms, including lunates, backed and truncated bladelets, occur in small percentages, as well as denticulate and notched implements. Most of the flakes in the collection are from core dressing, as shown by the presence of only two flake cores but 762 flakes. Among the flakes, 249 were classified as primary core rejuvenation while 55 appeared to be accidental, produced during the removal of blades. Therefore, in spite of the large numbers of flakes, they do not form a significant artefact category in the Ainchwara industry. On the contrary, the blades and bladelets are the dominant techno-typological elements. This feature is also corroborated by the classification of cores, of which 76% were used for obtaining blades and bladelets. Finally, there is a tendency to use the raw material exhaustively, both as cores and blanks. Even the chips have been retouched into implements. Another important area for large workshop is found at Kalinjar, some 23 kms. south of Naraini in Banda district. The site is located on the right bank of the Baghain. Once again a series of Upper Palaeolithic factory sites were found on a small hillock where chert and other finegrained silica were flaked into artefacts. Closely spaced artefact clusters were again noted and 1233 artefacts were collected from one location. The typological details of the retouched tool category are given in Table-4.

The techno-typological features of the Kalinjar industry conform to the Upper Palaeolithic phase of Uttar Pradesh in general and the Ainchwara industry in particular. Microliths and bladelets form an integral part of the industry, though flake and blade elements are dominant. As in the Ainchwara industry, the proportion of flake cores (39.6% of the flakes) differ widely, suggesting that the flakes do not form a predominant feature of the industry. However, in contrast, the tendency to exhaustively utilize debitage and raw material is not marked in the material and neither chips nor many preparation flakes have been retouched. (Fig. 4)

Blades and bladelets together comprise 145 of the blanks, and the number of cores for these types is very high, 138 from a total of 171 cores[16]. It may be significant to note that suitable raw material, in the form of small and medium sized pebbles, is abundant in the bed of the river Baghain so that the pressure of raw material scarcity never influenced lithic reduction strategies.

## Rock-Shelter Sites

The hill ranges in the vicinity of the Belan-Seoti valley are full of numerous rock-shelters of varying dimensions. These lie south of Drummondganj in the Mirzapur district and many contain Stone-Age materials. Excavations at Lekhahia[17], Baghaikhor[18], Morhana Pahar[19], Lahariadih[20], and Sinhor[21] suggest that these shelters were first occupied in the Upper Palaeolithic period. The Mura-Gurjhia hills were extensively explored and two rock-shelters excavated. Our findings suggest that only the larger shelters, more than 50 square metre floor area, were inhabitated. Those with smaller floor areas were found to be devoid of paintings as well as other culture remains [22].

Laharia-dih is the biggest rock-shelter of Mura-Gurjhia hills. Half of the shelter floor is covered by the partly collapsed overhanging rock and the remaining floor area now measures only 10 x 7.5 m. When occupied by prehistoric people, the shelter must have been almost double its present size. The cultural deposits were very shallow. However, large concentration of cultural-debris was found lying just outside the mouth of the shelter where its accumulation forms a small semi-circular mound resting against the shelter floor(Fig. 5). The two excavations carried out in 1977[23] and 1980[24] point to the existence of three artefact horizons which from top to bottom, are as follows :

(1) The uppermost 10-20 cm. deposit yielded a microlith bladelet industry associated with pottery but no metal.

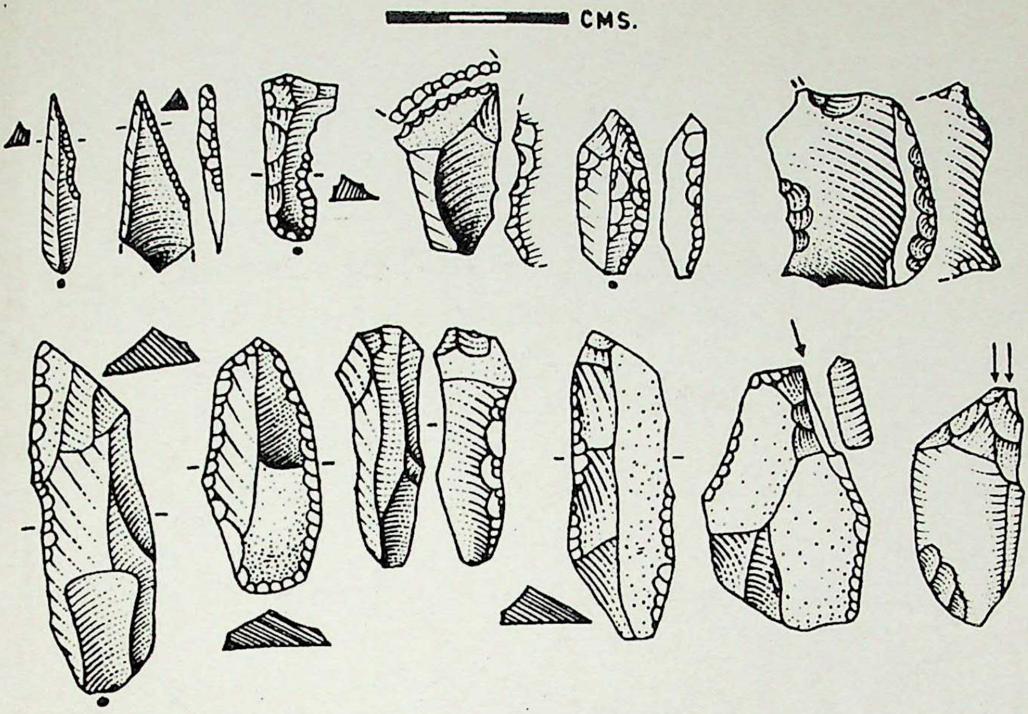

Fig. 3 Tool Type from Kalinjar

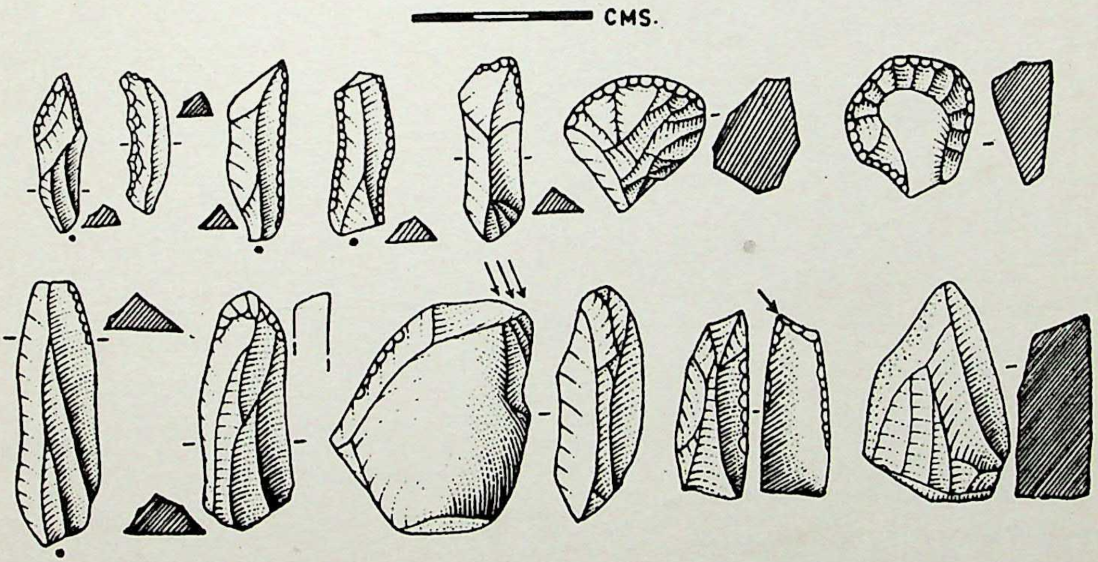

Fig. 4 Tool Type from Ainchwara

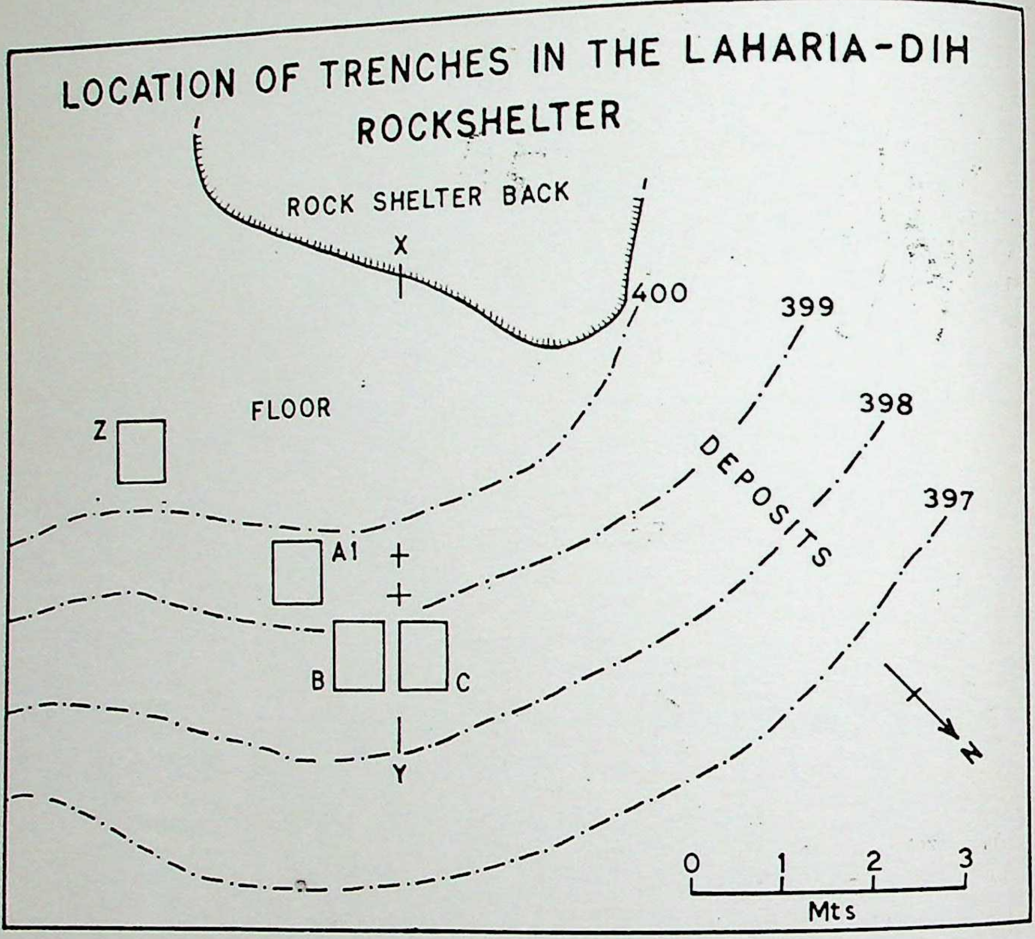
LOCATION OF TRENCHES IN THE LAHARIA-DIH ROCKSHELTER
ROCK SHELTER BACK
X
400
399
398
397
FLOOR
Z
DEPOSITS
A1
B
C
Y
N
0
1
2
3
Mts

Fig. 5

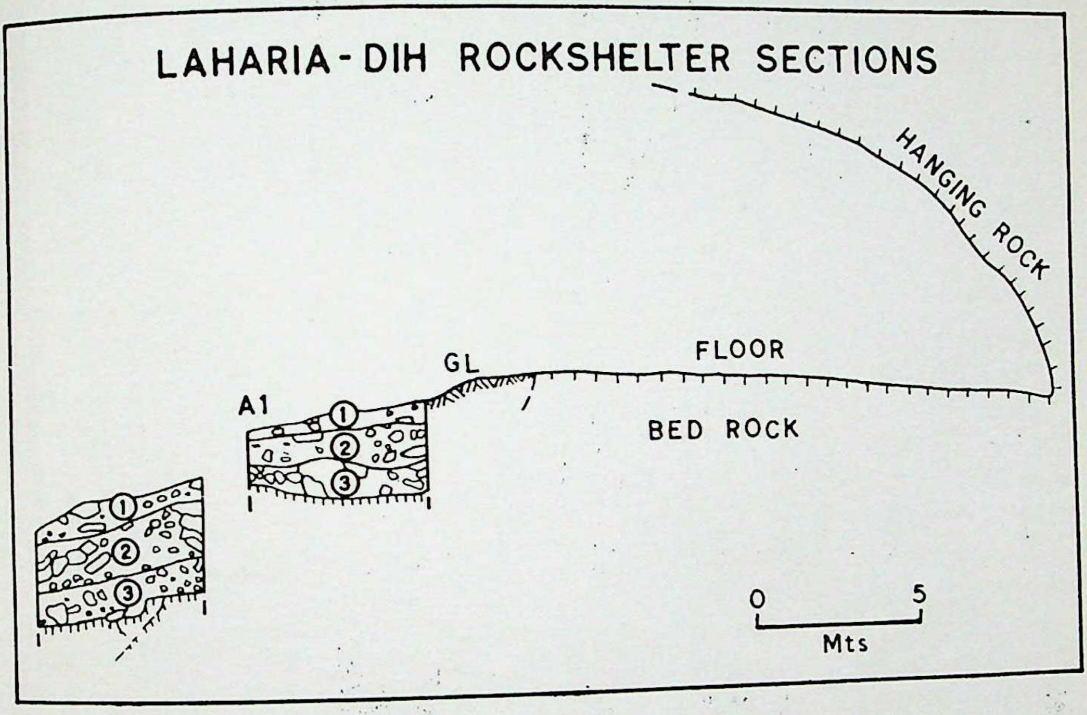
LAHARIA-DIH ROCKSHELTER SECTIONS
HANGING ROCK
FLOOR
GL
A1
BED ROCK
1
2
3
1
2
3
0
5
Mts

Fig. 6

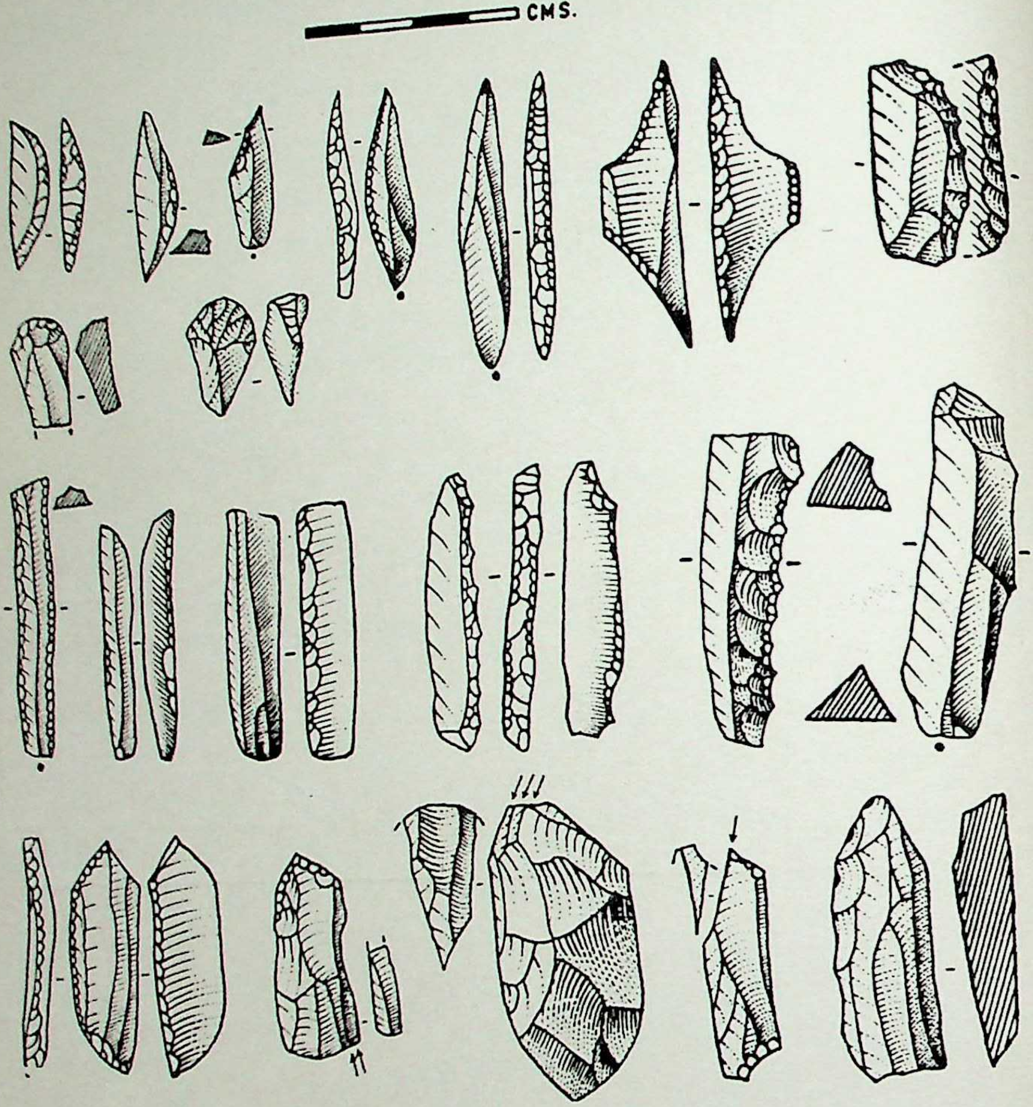

Fig. 7 Tool Type from Laharia - Dih

(2)The middle layer of 40-60 cm. thickness also contained microliths and bladelets alongwith hand-made pottery.

(3) The lower artefact deposit, **c.** 60 cm in thickness, produced an aceramic industry devoid of geometric microliths (Fig. 6). The tool- kit from this deposit has close techno-typological parallels with the latter Upper Palaeolithic assemblage of the Belan-Seoti valley, and hence deserves a detailed treatment. The artefacts are made of cryopto-crystalline silica as well as fine-grained quartzite and sandstone. The techno-typological analysis clearly demostrates (Table-5) that microliths and bladelets form a considerable proportion of microgravette point on backed blade/bladelet, lunate, borer, burin, and notched and denticulated tools (Fig. 7). Backing of blades and bladelets is very common but there are also specimens with low angle retouch mostly confined to the ventral face of the artefacts. The proportion of intentionally detached flakes and corresponding core- types is small[25]. Blades and bladelets are dominant in the unretouched group. However, initial microscopic scrutiny of the artefacts indicates that a number of unretouched blades and bladelets were utilized, since they retain micro-chipping and striations along their sharp edges.

The earliest artefact level at Chopani-Mando, an open-air habitation site on the left bank of the Belan[26], closely parallels the techno- typological trend of the Laharia-dih III industry[27], thus it appears that the population of the late Upper Palaeolithic phase inhabited large-scale rock-shelters as well as some open-air camp sites in the Belan-Seoti valley.

## IV

## DISCUSSION

The Upper Palaeolithic assemblages that have been preserved in the district of Banda, Allahabad, and Mirzapur have been found in three different geographical settings. Stratigraphically, as well as on techno-typological grounds they fall into two chronological facies.

The industries of the earlier facies are concentrated in the Belan- Seoti valley, as represented by the Daiya assemblage. The limited number of knapping floors, invariably small in dimension, are located at the foot of the Kaimur ranges near Drummondganj. When combined with other evidence from the region, it suggests that the valley was inhabited by small groups of people between c. 25,000 and 19,000 B.P. It is surprising that they did not occupy the numerous rock-shelters, some of which are located on the crest of the same hills where they regularly manufactured their implements. The industries of the latter facies appear to have a much wider area of distribution. Not only were the hill-top rock-shelters in the Mirzapur district occupied, but in the Banda district there were also numerous factory sites. The large- scale flaking activities at these workshop and rock-shelter sites, combined with the open-air locations, could be interpreted as an increase in population during the latter Upper Palaeolithic phase. However, there are reasons to believe that the basic techno- typological traits of the earlier facies continued in this latter phase, since the fundamental nature of the tool-kits remained more or less the same, apart from the marked increase in microlithic and bladelet elements. It may further be suggested that variations in the techno-typological features of the Banda and Mirzapur sites appear as regional differences rather than as evidence for culture change. The concentration of large numbers of factory-sites in Banda district is perhaps due to the availability of surplus raw material, since the river beds of Banda are rich in various types of crypto-crystalline silica pebbles, whereas the rivers of the Mirzapur area appear to be deficient in this respect.

The above account does suggest that Uttar Pradesh is not only one such region where evidence for the Indian Upper Palaeolithic phase was recognized for the first time, but it has also brought to light details regarding the geo-chronology and settlement tendencies. Since the initial spade work of discovering sites and recognizing the archaeological potentiality of the area has been done to a satisfactory level, it is high time to under-take problem oriented field investigations and detailed scrutiny of the evidence. For instance, specific enquiries such as why the tool-kits of the Upper Palaeolothic period of Uttar

Pradesh comprise not very well developed blade industry and many specialized tools which one gets in the other parts of the world? Whether the strong tendency towards the microlithic technology which is seen in this region from the beginning of the Upper Palaeolithic phase was a techno-typological substitute to some of the specialized artefact types or was related to ecological factors? Why was this phase of such a short duration as is seen from the river sediments and the scatter of the artefacts? etc. Furthermore, archaeological field data must be fully utilized for meaningful interpretations of the past societies. For example, besides techno-typological analysis, micro-wear studies may add substantially to the desired informations regarding the mode of subsistence and tool utilizing tendencies etc. Similarly detailed maps of the archaeological **debris** may reveal meaningful behavioural patterns of the contemporary population of hunter-gatherers when compared with such topographical details as to mark raw material resource areas, water sources, natural shelters and protective devices etc.

## REFERENCES (cited in the text)

| | |
|---|---|
| 1. Sharma, G.R. | 1973. Stone Age in the Vindhyas and the Ganga Valley **Radiocarbon and Indian Archaeology**, D.P. Agrawal & A. Ghosh (eds), 106-10. Bombay : Tata Institute of Fundamental Research.<br>1975. 'Seasonal Migrations and Mesolithic lake cultures of the Ganga Valley'. Presidential address, Indian Prehistoric Society, Delhi. |
| 2 Jayaswal, V. | 1983. 'Excavation of a painted rock-shelter at Laharia- Dih, Mirzapur district'. **Bulletin of the Deparment of Ancient Indian History, Culture & Archaeology**, Banaras Hindu University, No. 1, 126- 33.. |
| 3. Sharma 1975 op.cit. | |
| 4. Pant, P.C. | 1982. **Prehistoric Uttar Pradesh** (a study of Old Stone Age). Delhi : Agam Kala Prakashan. |

5. 1975 op. cit.

6. Jayaswal, V. & P.C. Pant 1980. 'Microlithic succession in India : a case study of Uttar Pradesh'. Indian Pre-and Protohistory 1980. Allahabad : Allahabad University.

7. Pant 1982 op. cit. pp. 100-1

8. Ibid p 101

9. Misra, V.D. 1977. **Some Aspects of Indian Archaeology.** : Prabhat Prakashan, Allahabad: Murty, M.L.K. 1968. 'Blade and burin industries near Renigunta on the southeastern coast of India'. Proceedings of the Prehistoric Society. 34, 83-101.

10. Pant op. cit.

11. Lal, B.B. 1973. **Indian Archaeology 1969-70 - A Review.**: Archaeological Survey of India, 36.

12. Jayaswal, V. 1978. **Palaeohistory of India** (a study of the prepared core technique) Delhi : Agam Kala Prakashan. pp. 186-7

13. Pant op. cit. p 109

14. Ibid p. 114

15. Ibid p. 114, pp. 115-116

16. Ibid pp. 125-6

17. Sharma, G.R. 1965. Comments on 'Mesolithic phase in the Prehistory of India'. **Indian Prehistory-1964**, V.N. Misra & M.S. Mate (eds), pp. 76-9, Poona: Deccan College Post Graduate and Research Institute.

18. Varma, R.K. 1965. Comments on 'Mesolithic Phase in the Prehistory of India'. **Indian Prehistory - 1964**, V.N. Misra & M.S. Mate (eds), 73-6, Poona : Deccan College Post Graduate and Research Institute.

19. Ibid

20. Pant op. cit. pp. 103-9; Jayaswal V. 1983 op. cit. pp. 126-33

21 Jayaswal, V. 1983 op. cit. pp. 126-33

22. Ibid : p. 126

23. Pant 1882 op. cit.

24. Jayaswal 1983 op. cit.

25. Pant op. cit. p. 106

26. Sharma, G.R., V.D. Misra, D. Mandal, B.B. Misra & J.N. Pal 1980. **Beginnings of Agriculture (Epi-Palaeolithic to Neolithic excavation at Chopani-Mando, Mahadaha and Mahagarha)**, Studies in History, Culture and Archaeology, Vol. IV, Allahabad: Allahabad Unviersity. p. 36

27. Pant op. cit. : p. 105

## OTHER SELECTED REFERENCES

Allchin, B. A. Goudie & K. Hegde 1978, **The Prehistory and Palaeography of the great indian desert**, London : Academic Press

Jayaswal, V. 1990. 'Hunter-gathers of the Terminal Pleistocene in Uttar Pradesh, India', **The World at 18000 B.P.** (Lower Latitudes), Vol.2 (Ed. C. Gamble & O. Soffer), London : 237-252.

Murty, M I K 1968 'Blade and burin Industries near Renigunta on the south eastern coast of India'. **Proceedings of the Prehistoric Society.** 34 83-101

Murty. M.L.K. & K.T. Reddy (1976). 'Significance of the lithic finds in the Cave area of Kurnool'. **Asian Perspectives**, Journal of Archaeology and Prehistory of Asia and the Pacific 18 (2), 214-26.

Raju, D.R. 1985. 'The Upper Palaeolithic industries of Cuddapah District, Andhra Pradesh'. **In Recent advances in Indo-Pacific Prehistory,** V.N. Misra & P. Bellwood, (eds), 147-156, New Delhi : Oxford & IBH.

Sali, S.A. 1985. 'The Upper Palaeolithic culture at Patne district Jalagaon, Maharashtra' **Recent advances in Indo-Pacific Prehistory,** V.N. Misra & P. Bellwood, (eds), 137-15, New Delhi: Oxford & IBH.

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TABLE -1.

**Typological composition of the Daiya assemblage**

| Tool type | Numbers |
|---|---|
| triangle-a typical | 1 |
| backed bladelet | 1 |
| partially backed bladelet with marginal retouch | 1 |
| 'federmesser' | 1 |
| endscraper | 1 |
| single-stroke axial burin | 1 |
| transverse burin | 3 |
| offset burin on proximal end | 1 |
| obliquely truncated bladelet with marginal retouch | 1 |
| truncated blade | 1 |
| notched blade | 2 |
| denticulated bladelet (side) | 2 |
| blade/bladelet with marginal retouch | 2 |
| convex side scraper | 1 |
| partially retouched blade | 1 |
| Total | 20 |

TABLE - 2

**Artefact classes in the Ainchwara assemblage**

| Artefacts | Numbers | Percentage |
|---|---|---|
| finished tools | 534 | 20.35 |
| partially retouched flake | 183 | 6.97 |
| partially retouched blade/bladelet | 56 | 2.13 |
| partially retouched nodule | 20 | 0.76 |
| retouched chip | 72 | 2.74 |
| unretouched flake | 511 | 19.48 |
| unretouched blade/bladelet | 350 | 13.34 |
| chip | 228 | 8.69 |
| core | 591 | 22.53 |
| unclassified | 78 | 2.97 |
| Total | 2623 | 99.96 |

TABLE - 3.

**Typological composition of the Ainchwara assemblage**

| Tool type | Numbers | Percentage |
|---|---|---|
| lunate | 8 | 0.98 |
| backed bladelet | 17 | 2.08 |
| truncated blade/bladelet | 5 | 0.61 |
| Blade/bladelet with one retouched side concave | 13 | 1.59 |
| straight | 35 | 4.28 |

| Tool type | Numbers | Percentage |
|---|---|---|
| concave-convex | 10 | 1.22 |
| convex | 9 | 1.10 |
| Total of blades/bladelets with one retouched side | 67 | 8.20 |
| Blade/bladelet with retouched sides | | |
| both margins straight | 7 | 0.86 |
| one straight and other concave | 6 | 0.73 |
| one concave and other convex | 4 | 0.49 |
| both concave | 5 | 0.61 |
| Total of blades/bladelets with both retouched sides | 22 | 2.69 |
| Notched and denticulated tool | | |
| notched blade | 20 | 2.45 |
| blade/bladelet with notch near base | 6 | 0.73 |
| blade/bladelet with notch near top | 5 | 0.61 |
| bladelet with abruptly retouched denticulated sides | 4 | 0.49 |
| denticulate on blade/bladelet | 50 | 6.12 |
| denticulate on flake | 67 | 8.20 |
| Total of notched & denticulated tools | 152 | 18.60 |
| Blade/bladelet with retouched top | 10 | 1.22 |
| backed blade | 14 | 1.71 |
| atypical borer | 2 | 0.24 |
| end-scraper | 17 | 2.08 |
| atypical endscraper | 18 | 2.20 |
| steep scraper on thick round flake/nodule | 10 | 1.22 |
| Burin | | |
| offset burin | 29 | 3.55 |

| Tool type | Numbers | Percentage |
|---|---|---|
| offset double burin | 2. | 0.24 |
| offset dihedral burin | 6 | 0.73 |
| transverse burin | 8 | 0.98 |
| single-stroke axial burin | 1 | 0.12 |
| axial burin on retouch | 4 | 0.49 |
| axial dihedral burin | 6 | 0.73 |
| axial burin | 5 | 0.61 |
| axial double burin | 1 | 0.12 |
| Total of burins | 62 | 7.59 |
| Side scraper on nodule | 7 | 0.86 |
| Transverse scraper | 7 | 0.86 |
| Double side scraper | 5 | 0.61 |
| Flake with more than two retouched sides | 11 | 1.35 |
| Wavy-edged side scraper | 2 | 0.24 |
| Convex-concave side scraper | 4 | 0.49 |
| Concave-straight side scraper | 2 | 0.24 |
| Concave side scraper | 2 | 0.24 |
| Straight side scraper | 8 | 0.98 |
| Convex side scraper | 21 | 2.57 |
| Flake with retouched top | 11 | 1.35 |
| Obliquely retouched flake | 2 | 0.24 |
| Retouched chips | 72 | 8.81 |
| Partially retouched flake | 183 | 22.40 |
| Partially retouched blade/bladelet | 56 | 6.85 |
| Partially retouched nodules | 20 | 2.45 |

| Tool type | Numbers | Percentage |
|---|---|---|
| Grand total | 817 | 100 |

TABLE - 4

**Typological composition of the Kalinjar assemblage**

| Tool type | Numbers | Percentage |
|---|---|---|
| Triangle | 1 | 0.23 |
| Lunate | 1 | 0.23 |
| Backed bladelet | 6 | 1.41 |
| Backed blade | 8 | 1.87 |
| Backed blade with concave side | 5 | 1.17 |
| Backed flake | 3 | 0.70 |
| Backed flake with retouched side | 2 | 0.47 |
| 'Federmesser' | 1 | 0.23 |
| Atypical 'Federmesser' | 2 | 0.47 |
| Burin | | |
| axial burin on a notch | 2 | 0.47 |
| single stroke axial burin | 3 | 0.70 |
| axial burine on proximal end | 2 | 0.47 |
| axial dihedral burin with round end | 2 | 0.47 |
| axial burin | 1 | 0.23 |
| offset burin | 2 | 0.47 |
| transverse burin | 1 | 0.23 |
| flat-faced carinated burin | 1 | 0.23 |
| Total of burins | 14 | 3.28 |

| Tool type | Numbers | Percentage |
|---|---|---|
| Endscraper | | |
| nosed endscraper | 1 | 0.23 |
| typical endscraper | 11 | 2.58 |
| atypical endscraper | 5 | 1.17 |
| Total of endscrapers | 17 | 3.98 |
| Blade | | |
| Blade with one retouched side | 10 | 2.34 |
| Blade with both retouched sides | 13 | 3.04 |
| Blade with retouched margin and base | 2 | 0.47 |
| Blade with retouched top | 4 | 0.94 |
| Bladelet with retouched margin | 4 | 0.94 |
| Borer | | |
| double borer | 2 | 0.47 |
| middle borer | 9 | 2.11 |
| side borer | 14 | 3.28 |
| atypical borer | 5 | 1.17 |
| Total of borers | 30 | 7.03 |
| Point | | |
| narrow backed point | 2 | 0.47 |
| typical point on flake | 3 | 0.70 |
| atypical point | 5 | 1.17 |
| Total of points | 10 | 2.34 |

| Tool type | Numbers | Percentage |
|---|---|---|
| Denticulate | | |
| side-denticulate on blade | 9 | 2.10 |
| double side-denticulate on blade | 2 | 0.47 |
| side-denticulate on core | 1 | 0.23 |
| double-sided and top-denticulate on core | 1 | 0.23 |
| peripheral-denticulate on flake | 1 | 0.23 |
| side-tenticulate on flake | 25 | 5.85 |
| double side-and base-denticulate on flake | 1 | 0.23 |
| double side-and top-denticulate on flake | 2 | 0.47 |
| side-and top-denticulate on flake | 3 | 0.70 |
| Total of denticulates | 71 | 16.63 |
| Notched tool | | |
| bladelet with notch close to base | 2 | 0.47 |
| bladelet with notch on top | 1 | 0.23 |
| bladelet with notch on side | 8 | 1.87 |
| blade with notch on top | 2 | 0.47 |
| blade with notch on side | 7 | 1.64 |
| flake with notch on top | 1 | 0.23 |
| flake with notch on base | 1 | 0.23 |
| flake with notch on side/sides | 5 | 1.17 |
| Total of notched tools | 27 | 6.32 |
| Side scraper and others | | |
| angle scraper | 2 | 0.47 |
| transverse scraper | 2 | 0.47 |
| straight side scraper | 4 | 0.94 |

| Tool type | Numbers | Percentage |
|---|---|---|
| convex side scraper | 6 | 1.41 |
| concave side scraper | 7 | 1.64 |
| zig-zag side scraper | 2 | 0.47 |
| convace-convex side scraper | 2 | 0.47 |
| double convex side scraper | 2 | 0.47 |
| double straight and convex side scraper | 2 | 0.47 |
| double straight side scraper | 1 | 0.23 |
| flake with retouched side base | 3 | 0.70 |
| flake with retouched top | 90 | 21.08 |
| flake with retouched top and base | 1 | 0.23 |
| Total of side scrapers and others | 124 | 29.4 |
| Partly retouched blanks | | |
| partly retouched bladelet | 4 | 0.94 |
| partly retouched blade | 6 | 1.41 |
| partly retouched flake | 62 | 14.52 |
| Total of partly retouched blanks | 72 | 16.86 |
| Grand Total | 427 | 100 |

TABLE - 5.

**Typological composition of the Laharian-dih assemblage**

| Tool type | Numbers | Percentage |
|---|---|---|
| Obliquely truncated backed bladelet | 2 | 2.22 |
| Obliquely truncated bladelet | 5 | 5.56 |
| Backed bladelet | 13 | 14.44 |
| Lunate | 9 | 10.00 |

| Tool type | Numbers | Percentage |
|---|---|---|
| Microgravette point (two atypical) | 7 | 7.78 |
| Point on bladelet (obliquely worked edge) | 4 | 4.44 |
| Borer on flake | 1 | 1.11 |
| Endscraper bladelet | 2 | 2.22 |
| Round scraper on core rejuvenating flake | 1 | 1.11 |
| Burin | | |
| offset burin (flake) | 1 | 1.11 |
| axial burin (flake) | 2 | 2.22 |
| single stroke axial burin with truncated base | 1 | 1.11 |
| axial burin on retouch | 1 | 1.11 |
| offset burin on proximal end | 2 | 2.22 |
| Total of burins | 7 | 7.78 |
| Backed blade | 1 | 1.11 |
| Blade/Bladelet with one retouched side | 6 | 6.67 |
| Bladelet with both retouched sides | 1 | 1.11 |
| Flake with retouched top | 1 | 1.11 |
| Angle scraper | 1 | 1.11 |
| Simple concave side scraper | 1 | 1.11 |
| Transverse scraper | 1 | 1.11 |
| Notched and denticulated tools | | |
| notched flake | 2 | 2.22 |
| notched blade | 1 | 1.11 |
| notched bladelet | 1 | 1.11 |
| bladelet with denticulated back | 1 | 1.11 |
| denticulated bladelet | 2 | 2.22 |

| Tool type | Numbers | Percentage |
|---|---|---|
| blade with micro-denticulation | 3 | 3.33 |
| denticulated backed blade/bladelet with retouched margin (ventral) | 2 | 2.22 |
| denticulated flake | 2 | 2.22 |
| Total of denticulated and notched tools | 14 | 15.56 |
| Partially retouched flake | 10 | 11.11 |
| partially retouched bladelet | 3 | 3.33 |
| Grand Total | 90 | 100 |

# SOME ASPECTS OF THE MESOLITHIC OF THE GANGA VALLEY

**Radha Kant Varma**

## GEOGRAPHICAL SETTING & THE ENVIRONMENT :

The discovery and excavation of the Mesolithic settlements in the seventies and eighties of the present century in the Ganga Valley have thrown a flood of light on the settlement pattern of the mesolithic people in the Ganga Valley in particular and India in general. The vast tract of the alluvial land lying between the Himalayan foothill in the north and the Vindhyan, Rohatasgarh, Chotanagpur plateau in the south started attaining its present form during the post-Tertiary period when the trough was gradually filled up by fine alluvium. This entire tract is known as the Ganga Valley because the Ganga forms the main drainage system of the region. The post-glacial period which ushered in a period of aridity throughout the world, helped in the evolution of the present form of the Ganga Valley. The onset of the milder climate changed the face of the earth. The large ice-sheets that had once covered the surface of the glaciated zones vanished, likewise large water-locked areas and marshy lands started drying up. These were replaced by grassy lands and forest cover in suitable ecological zones. The new Ganga alluviam however gradually turned into good grass lands which sprouted up with new types of grasses, plants etc. The examination of a few soil samples collected and examined from the vicinity of **Mahadaha**[1] and horse-shoe lake of Nevari (25' 41" N and 81' 31' 30" E)[2] near Sarai Nahar Rai support the above contention. They suggest a grass land vegetation during the period under consideration.

In the vast plain, featureless alluvium the Ganga flowed making new meanders and bursting old ones. The left over meanders of the Ganga can still be seen on the survey of India map in the alluvial plains north of the present course of the Ganga. Some of these horse shoe lakes are fairly big and were a perennial source of water supply till recently.

## GEOLOGICAL FORMATION AND THE ADVENT OF MAN IN THE GANGA VALLEY

The gangetic alluvium is divisible into **bhanger** and **khadar** the newer alluvium[3] A study of the exposed sections right from Phaphamau (near Allahabad) upto a distance of approximately 25 kms. on Allahabad-Unnao road revealed that the Bhangar has a maximum thickness of about 10.50 m. above the present flood plain of the Ganga and is composed of four distinct units. The earliest yellowish clay unit is full of kankar (calcium carbonate) concretions and has a thickness ranging from 30 cm to 1.50 m. The over lying deposit is that of blackish clay with a thickness ranging between 90 cm. to 2 m. This deposit is capped by clay (1.50-3m.) which contains Kankar nodules and small shells. The topmost deposit ranging between 2m. to 4m. is loose and sandy. Mesolithic artifacts are associated with the bhangar formation. The khadar is devoid of artefacts.

Much before the Ganga Valley, attained its present form man was living in the Vindhyan region in the Valleys of the Belan, Adwa and Son etc. on the out crops of the Vindhyan ranges and also on the top of the Kaimur in rock shelters right from the mid-pleistocene period. Numerous sites from Lower Palaeolithic to Mesolithic have been located in the entire Vindhyan region. It is interesting to note that there is a progressive increase in the number of sites as we advance from Lower Palaeolithic to Mesolithic. It is also indicative of the progressive increase in the population of man inhabiting the region. The increase in the number of settlements and diversity in the tool-kit is very much marked in the sites which are placed within the mesolithic. The melting of ice-sheets and the drying up of water locked areas removed the artificial bampers of show and water and the onset of milder climate, facilitated the movement of man from one region to another. The growth in the population, the evolution of better and effective tool-kit, new hunting devices and the growing aridity resulted in the depletion of the food resources of the Vindhyan region and prompted the Vindhyan mesolithic folk to venture into the emerging vergin land of the Ganga Valley which offered them plenty of edible seeds, acquatic fauna besides small animals that subsist on grass lands.

The Ganga Valley was opened up during the early holocene in the epi-**palaeolithic** period by the men inhabiting the Vindhyan region. Only five such sites have been located[4]. These provide us with the earliest evidence of the presence of man in the Ganga Valley. Such sites are represented by a few tools consisting of thick blades, points and scrapers etc. mostly made on cherty material. Such sites do not have any evidence of a settlement site or a factory site and can be termed as transitory camp-sites. It seems that in the beginning the man did not stay in the Ganga Valley. They came for a very short period of time alongwith their tool kit and went back.

## MESOLITHIC SETTLEMENTS

It was during the **mesolithic period** that the full fledged exploitation of the Ganga Valley started. Nearly two hundred sites have so far been located. They have been divided into two groups on the basis of tool- typology:

| | |
|---|---|
| Group I : | **Early Mesolithic**- Characterised by non-geometric microliths. |
| Group II : | **Advanced Mesolithic**- Characterised by Geometric microliths. |

The sites of **group I** also are represented by a few tools of non-geometric type and are devoid of habitational deposits. Where as the sites of **Group II** yield evidence of habitational deposit and are associated with burials and hearths. From the nature of the sites of the Ganga Valley it is evident that though the man from the Vindhyan region had started going into the Ganga Valley from the epi- palaeolithic period he did not make any settlement till the advanced mesolithic phase.

## EXCAVATED SITE

So far three sites namely **Sarai Nahar Rai** (25' 29' 2"N: 82' 11' 30" E) **Mahadaha** (25' 29' 2" N : 82' 11' 30" E) and **Damdama** (26' 10' N : 82; 10' 30" E) have been excavated. Out of these the last two sites were more extensively excavated. All the three site are located in close vicinity of each other in the district of Pratapgarh. Sarai Nahar Rai is located on the bank of a horse shoe lake at a distance of 15 miles in south-westerly direction from Pratapgarh. The site was excavated for two seasons. It revealed two periods of occupation and brought to light eleven burials and 8 hearths. Four burials and three hearths were located by surface indications. A very large number of microliths--geometric & non geometric were collected from the surface.

The site of Mahadaha is located on the western bank of an ancient lake to the east of modern village Mahadaha at a distance of 5 km. north of Patti sub-division and 31 km. to the north-east of Pratapgarh.

The Mesolithic settlement covers an area of approximately 8000 sq. m. out of which an approximately 261.90 sq. m. was excavated in two seasons (1977-79). The excavation revealed a habitation deposit of 60 cm. divisible into four distinct layers. The four, layers correspond with the four periods of burial activity. The excavations revealed 28 graves with a total of 58 skeletons as well as 25 oval or circular fire pits or hearths.

A study of the skeletal remains indicate that the Mahadaha population was distributed among various age groups of children adult and old and the males and females were evenly distributed in each phase. In phase I and II the skeletons belonged to adults mainly but in phase III and IV it included childern below 7 years of age and persons 40 years old and above.

The third excavated site is Damdama (Warikalan). It is located 5 km. towards north-west of Mahadaha. The ancient settlement is located on an elevated ground, roughly circular in shape measuring 8,750 sq. m. on the confluence of two branches of the Tambura nala a tributory of Pili nadi which discharges itself in the river Sai. These nalas are the remnants of an ancient horse-shoe lake. Horizontal excavations were carried out in five seasons in three sectors covering an area approximately of 150 sq. m. divisible into ten layers. The excavations brought to light 41 graves and -- hearhs, on the basis of stratigraphy the burials have been divided into VIII phases. The earliest grave XII was dug into the natural soil and is sealed by layer (10). It is the same horizon which forms the bottom of bhangar deposit. On this evidence it can be said that the people arrived at the site when the yellow clay of the Bhangar was in the process of deposition and continued to live at the site on account of which a deposit of 1.5 m accumulated. There is no evidence that the site was ever deserted. Earlier Prof. Sharma had proposed **a theory of seasonal migrations** and was of the opinion that 'these sites should be treated as **camp sites** where these people settled for one season. There is no doubt that favourable sites like Sarai Nahar Rai and Mahadaha were visited time and again and thus provided camping grounds to these new immigrants of the Ganga Valley'[5]. But now in the light of evidence contrary to it, it is no longer tenable. The sites were stable bases and can be described as settlements[6].

## A. HOMOGENEOUS CULTURE : INDUSTRY :

The excavations at the three sites discussed above reveal a homogeneous mesolithic culture and opens up an entirely new chapter in the mesolithic of India. It has already been pointed out that it belongs to **geometric microlithic phase** which was unassociated with pottery. It can be equated with the second phase of the mesolithic of the Vindhyan region [7]. It is interesting to note that pottery is not introduced at the mesolithic sites of the Ganga Valley whereas in the Vindhyan region it is associated at some of the sites. It was probably because the mesolithic folk there came into contact with the Neolithic people who were not only making pottery but had domesticated rice and the domestication of animals had also started.

The excavations have brought to light a large number of microliths, bone tools, stone objects and ornaments from all the three sites. The microliths as has already been pointed out consist of both geometric and non-geometric types and are very diminutive in relation to their Vindhyan counterparts. Since the raw material was not locally available the cores were exhausted completely. At the site of Damdama it has been observed that the percentage of microliths in relation to other antiquities is higher in the lower levels than in the upper levels. It is important to note that the percentage of bone tools increases appreciably in the upper levels probably to make up the paucity of stone tools (microliths). It may not be out of place to mention that on the Vindhyan sites the bone tools are completely absent orare negligible.

## STONE OBJECTS AND PATTERN OF SUBSISTENCE

The mesolithic settlements of the Ganga Valley are marked by the presence of a very large number of stone objects-quern and mullers. At Mahadaha querns formed the largest group (191 of 310). At Damdama, they also form the largest number (141 of 161). In the Vindhyan region most of the sites are devoid of these objects, and wherever they are found their number is considerably small. Querns and mullers are used for processing vegital food and their presence in such large numbers indicate that the mesolithic folk in the Ganga Valley depended more heavily on gathering whereas the people in the Vindhyan region depended more on hunting for their subsistence. In the Ganga Valley vegital resources were abundant and easily available. Moreover hunting tends to be a high risk, low return subsistence activity, whereas gathering is a low risk, high return subsistence activity. Since the mesolithic folk of the Ganga Valley heavily depended on vegital food they made comparatively more extensive and stable settlements which present a picture of incipient villages where population lived generation after generation without extended periods of abandonment. Among such sites mention may be made of Mahadaha and Damdama. The dependence on vegital food contributed towards semi-sedentry life. Such sites are rare in the Vindhyan region because there the dependence on hunting was greater. A large number of pits with plastered and unburnt sides have been noticed at Mahadaha. These pits do not appear to be hearths and therefore they might have served as storage pits for surplus grain.

It is difficult to form an accurate idea regarding the population of these settlements in different phases. However, we can get a rought idea of population of the last phase which has been more extensively excavated. Variables used to estimate population are the querns and mullers. From the last phase 191 and 110 querns were recovered from Mahadaha and Damdama respectivey. In India normally a family has one set of grinding stones and if we use this model for the prehistoric period we can extrapolate a population estimate. If we assume a minimum of 4 to 5 persons per unit, the populations would work out to between 700 to 1000 at Mahadaha and 530 to 650 at Damdama.

A very large number of pit **hearths** have been located and excavated at the three sites of the Ganga Valley. These are oval or round and were dug into the ground.

They were used for roasting animal bones. Partially charred and burnt animal bones have been recovered form the hearths which attest to the fact that they had learnt the use of fire for cooking their meals. Beside small hearths large hearths have also been located which were used probably as community hearths[8].

It has already been mentioned above that a very large number of burials have been excavated at each of the sites which indicates that this had attained the status of an established ritual. The deads were buried in a set pattern. Normally they were buried in true west-east or east-west orientation in extended position. The difference in orientation is only in degrees probably on account of the position of the sun in different periods of the year. There are a few exceptions. A couple was buried in north-south orientation and a burial was made in flexed position (both at Damdama). The excavations of burials at Damdama[9] suggest that some sort of fire ritual was performed in the grave itself just before burying the dead. Bones, microliths, bone tools, bone and antler ornaments, moluscan shell etc. have been recovered from some of the graves. Probably they formed part of grave goods which were offered to the dead at the time of the burial.

## COUPLE BURIALS

Among the burials of the Ganga Valley the most significant are the couple burials in which male and female have been buried together in a set pattern. Such graves have been reported from all the three excavated sites -- Sarai Nahar Rai (Grave No. VIII), Mahadaha (Grave No. I and V) and Damdama (Grave Nos. XVI, XX, VI, XXX, XXXVI, XVIII. There is some doubt in the indentification of the sex of a skeleton in grave No. XVI and grave No. XVIII has yielded one male and two female skeletons). The significant aspects of these burials are summarised as under :-

1. In all such burials the male was the first to be placed in the grave.
2. Both the deads were buried simultaneously without time gap and the graves were prepared to accommodate more than one body.
3. In all the cases except grave No. XX, XXXVI, and VI (at Damdama) the female has been placed to the left of the male. In grave No. VI they have been placed in opposite direction in north-south and south- north orientation.

These couple burials are of special significance because they indicate some sort of male-female relationship which finally ended in the evolution of the institution of marriage or a concept of a family unit. The formation of smaller units is also attested to by the discovery of small hearths. With the greater dependence on vegital food the formation of smaller units must have started because community processing of vegital food is not an easily feasible proposition. The concept of individual ownership must have played an important role in the formation of smaller units.

These burials further raise a number of important questions. The first and fore most question is, are these burials accidental? If it is so how in all the cases a male and a female were involved and how they were buried in identical fashion? If it was not so then how they died and who died first? There are numerous such questions that can not be answered at the present state of our knowledge.

## THE PEOPLE

Dr. Kennedy who has studied the skeletal remains of Sarai Nahar Rai is of the opinion that the people of Sarai Nahar Rai were anatomically modern homonids i.e. **Homo sapiens sapiens**. While bearing some physical resemblances to their sapient collaterals to the west of the Indus, the Sarai Nahar Rai population is characterised by a spectrum of phenotypic characteristics peculiar to itself with respect to cranial architecture, these ancient people of the Ganga Valley have large and musculary robust skulls, which range from low mesocrany to hyperdolichocrany[10]. These people had large and robust skulls and they were relatively tall, with the status of males at Sarai Nahar Rai being approximately 173.93 cm to 192.08 cm[11]. Dr. Kennedy feels that their large body size and distinctive cranial features reflect a regional adaptation leading to large body size[12].

## AESTHETIC SENSE

These people had a developed aesthetic sense and divised ways and means to decorate themselves. From Mahadaha burials ear-rings, or necklaces have been recovered from three graves[13]. Two males (Fig. 5 & 7) were buried adorned with necklaces made of antler rings. At Damdama in grave No. VII a pendant made of nory with eyes on either ends a long with two bone arrowheads were found[14]. The form of these items is sociotechnic, and may have been significant of particular status in society[15].

## RITUAL AND BELIEF IN SUPERNATURAL

The meticulous, steriotype way of the preparation of grave, its orientation, placement of grave goods etc. take the form of a ritual and the performance of ritual by a social group presupposes the development of eschatalogical concepts and group consciousness, this was probably the beginning of the concept of supernatural and religion. The orientation of the graves must have been directed by the position of the Sun in different parts of the year. The sun must have attracted them on account of its life giving qualities. It may be wrong to trace sun worship from the mesolithic period.

## AUTIQUITY

There is only one carbon date, (TF-1104) available from Sarai Nahar Rai that reads 10,050±110b p (8400±113 B.C.). On typological consideration the mesolithic of 1the Ganga Valley is comparable with the second phase of the Mesolithic of the Vindhyan region 16 and the II B phase of Chopani Mando 17 which are placed within a time bracket of 8000 B.C. to 2000 B.C. with marginal overlap. Considering the thick deposit of Damdama the lower limit may be extended to 10,000 B.C.. This is of course subject of corrections in the light to new evidence.

## REFERENCES

1. Pant, D.D. and Pant, R, 1980 Preliminary observation on pollen flora of Chopani Mando (Vindhyas) and Mahadaha (Ganga Valley). **Beginnings of Agriculture**, ed. G.R. Sharma et. al., pp. 229-30, Allahabad, Abinash Prakashan.

2.Gupta, H.P. 1976 Holocene palynology from meander lake in the Ganga Valley, District Pratapgarh, U.P., **The Palaeobotanists** 2, pp. 109-119.

| | |
|---|---|
| 3. Wadia, D.N. | 1966 **Geology of India** (3rd ed.) London, Macmillan. |
| 4. Sharma, G.R. et. al | 1980 **Beginnings of Agriculture**, Allahabad, pp. 122. |
| 5. Ibid, p.78 | |
| 6. Varma, R.K. | 1985 The Mesolithic cultures of India, **Puratattava** 13 & 14, |
| 7. Ibid, p.29 | |
| 8. Sharma, G.R. | 1973 Mesolithic Lake cultures in the Ganga Valley, **Proceedings of the Prehistoric Society** 39, pp. 129-146. |
| 9. Varma, R.K. et. al. | 1985 A Preliminary report of the excavation of Damdama (1982-84), **Man & Environment** Vol. IX. |
| 10. Kennedy, K.A.R. | 1986 Mesolithic Human Remains from the Gengetic Plain : Sarai Nahar Rai, **South Asia Occasional papers and thesis No. 10 South Asia programme**, connel University |
| 11. Kennedy, K.A.R., | 1984 Biological adoptations and affinities of Mesolithic South Asians. The people of South Asia ed. by J.R. Lukacs, pp. 29-57, New york : Plenum Press. |

12. Ibid, p. 49

13. Sharma, et. al. 1980 Op. cit., p. 109

14.Varma, et. al. 1985, p.64

| | |
|---|---|
| 15. Pandey, J.N. | 1985 Settlement pattern and life in Mesolithic period in Uttar Pradesh, unpublished Ph.d. Thesis, Allahabad University Library. |
| 16. Varma, R.K. | 1986 The Mesolithic Age in Mirzapur, Allahabad, Paramjoti Prakashan. |

17. Sharma, et. at. 1980.

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# HUMAN BURIAL PRACTICES AT MESOLITHIC DAMDAMA

**J.N. Pal**

The Mesolithic culture represents the earliest human culture of the Gangetic plain. The discovery of settlements of the first colonizers of this largest plain goes back to late sixties when Sarai Nahar Rai was put on the map of Stone Age cultures of India. Subsequent investigations in the area brought to light a number of primary sites of different phases of the Mesolithic culture. These sites represent temporary settlements, camp sites or long duration settlements. Three of the latter sites, viz. Sarai Nahar Rai[1], Mahadaha[2] and Damdama[3] have been excavated by the Department of Ancient History, Culture and Archaeology, University of Allahabad. All the excavated sites are habitation-cum-burial sites and are located in Pratapgarh district.

The investigations carried out in the middle part of the plain have brought to light a good deal of evidence to present the life ways of the Mesolithic people in the middle Gangetic plain. As a result of investigations in different aspects of the culture considerable data for the reconstruction of the environment and human adaptation in the early Holocene period is now available. Sendentary settlement, use of microliths and bone tools for the exploitation of wild flora and fauna, sand stone artefacts used as food processing equipments, adoring of the body by bone ornaments and ochre-paints, use of pit hearths for roasting the animal flesh and construction of the burnt plastered floors are some of the interesting features of the culture.

The Mesolithic sites put to excavations have revealed that the people, like in other parts of the country even in later period, had a tradition of burying the dead within the habitation area. Fourteen human skeletons in eleven graves at Sarai Nahar Rai, thirty two skeletons in twenty eight graves at Mahadaha and forty seven skeletons in forty one graves at damdama, brought to light so far, have furnished interesting evidence of human burial practices of the first settlers of the Gangetic plain. Majority of the graves contain single burial but there are ample instances of double and multiple burials.

A study of the distribution pattern and morphological features of the graves, the pattern of placing the dead within the grave, position of different parts of the body and orientation of the skeleton present the complete picture of the burial practices in the Mesolithic Gengetic plain. The burials also shed welcome light on the rituals and beliefs, dietary behaviour, palaeopathology and status of the people within the society in the Mesolithic period.

The Mesolithic site of Damdama (Lat. 260 10' N, Long. 820 10' 36" E) located in Patti sub-division of Pratapgarh district is about 5 km. north of Mahadaha. Covering an area of approximately 8750 square meter the site of Damdama is situated on a slightly reaised ground on the confluence of two branches of Tambura nala, a tributary of Pili Nadi which discharges itself in the Sai river. Five season's (from 1983 to 1987) excavations at the site brought to light the maximum hahitation deposit of 1.5m, divisible into ten layers. Except the top-most layer, which is a post-Mesolithic deposit at the site capping the Mesolithic occupation, all the nine layers are Mesolithic each corresponding to a separate phase. There is no evidence of interruption in the stratigraphy. Many important features of the Mesolithic settlement indicative of environment and human adaptation of the early Holocene period in the Gangetic plain have been brought to light by the excavations at the site. Pit hearths, burnt plastered floors and artefacts including microliths, bone objects, querns, mullers, hammer

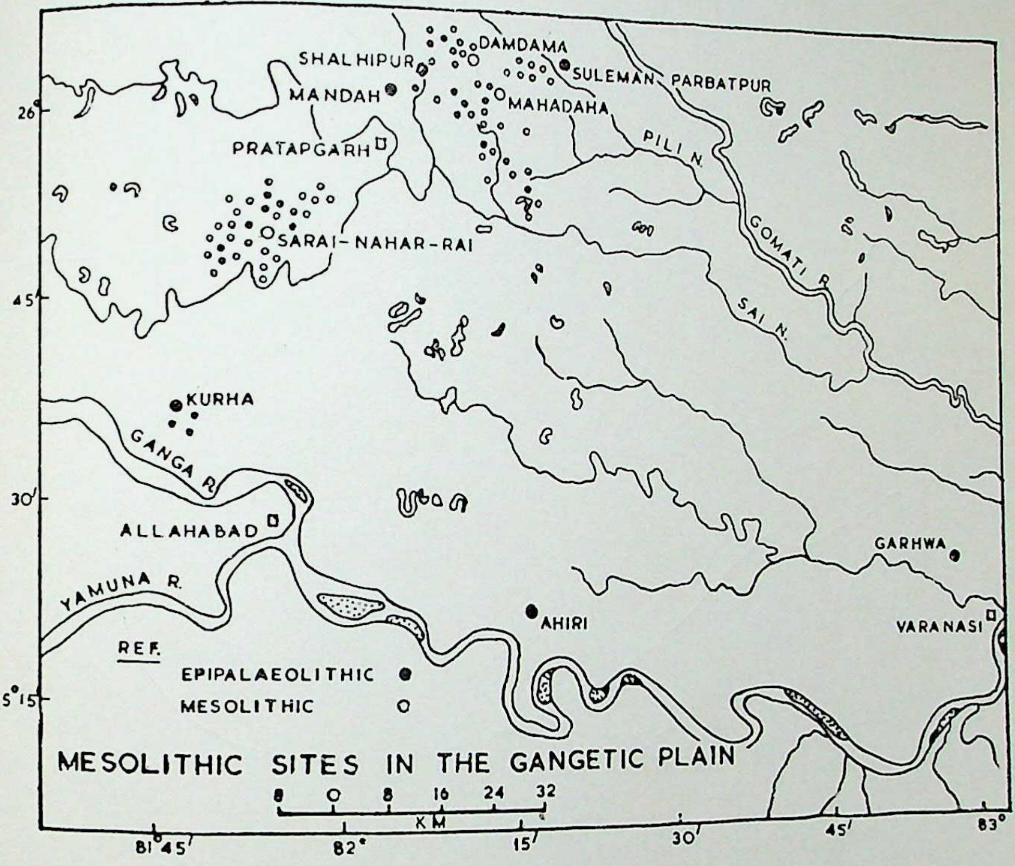
DAMDAMA
SHALHIPUR
SULEMAN PARBATPUR
MANDAH
MAHADAHA
PRATAPGARH
PILI N.
SARAI-NAHAR-RAI
GOMATI R.
SAI N.
KURHA
GANGA R.
ALLAHABAD
YAMUNA R.
GARHWA
AHIRI
VARANASI
REF.
EPIPALAEOLITHIC ●
MESOLITHIC ○
MESOLITHIC SITES IN THE GANGETIC PLAIN
8 0 8 16 24 32
KM
26°
45'
30'
25°15'
81°45'
82°
15'
30'
45'
83°

Fig. 1

DAMDAMA

PLAN OF GRAVE-VI

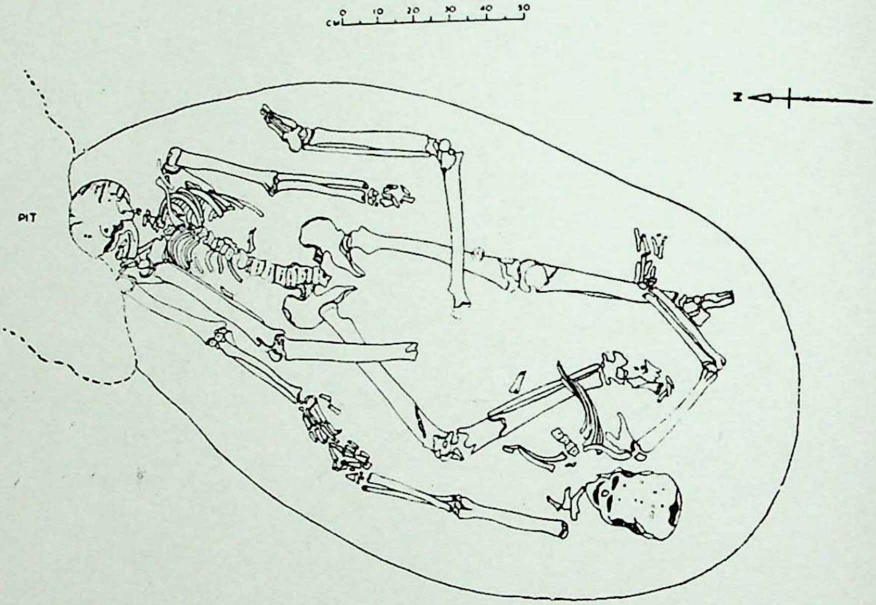

Fig. 2

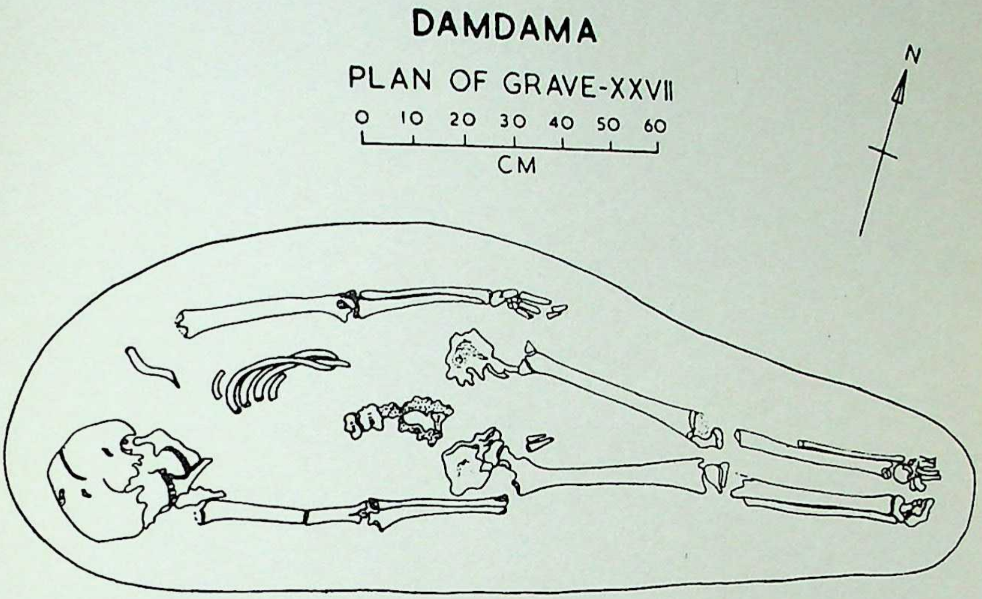
DAMDAMA
PLAN OF GRAVE-XXVII
0 10 20 30 40 50 60
CM
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Fig. 3

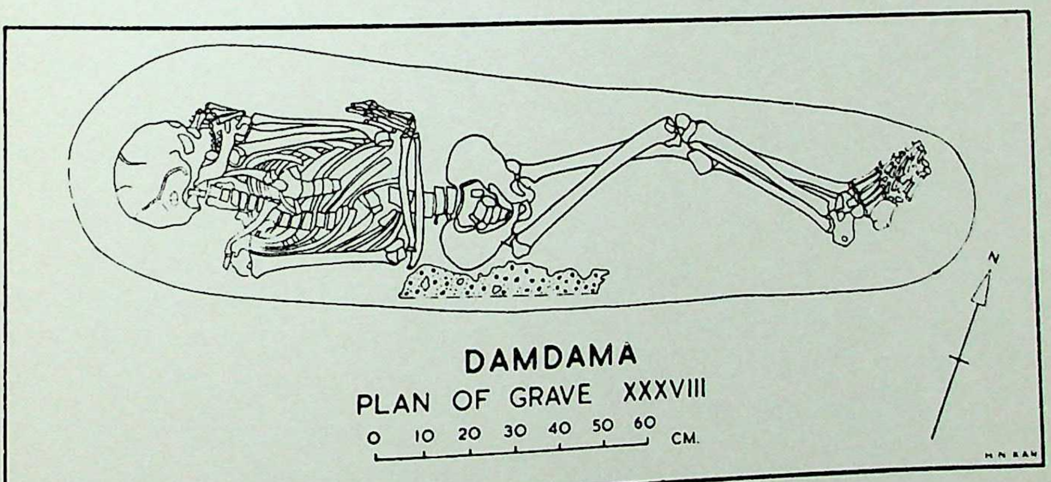
DAMDAMA
PLAN OF GRAVE XXXVIII
0 10 20 30 40 50 60 CM.
N
H N RAM

Fig. 4

stone-cum anvils, animal bones, burnt clay lumps, botanical remains, etc. are the main cultural elements associated with nine different phases of the Mesolithic culture at the site.

Human burial within the habitation area is one of the most important features of the Mesolithic culture in the Gangetic plain. Excavations at Damdama brought to light interesting evidence of human burial practices. As many as 41 graves were brought to light in the western and central sectors of the site. The eastern sector did not yield evidence of human burial but the possibility of burial being there too can not be ruled out. Central sector has revealed interesting evidence of five double burials and one multiple burial.

Out of 41 graves located at Damdama 5 graves (Nos. VI, XX, XVI, XXX, and XXXVI) are double burials (Fig. 2, Pl.I) and one (grave No. XVIII) is a multiple burial containing three individuals[4]. Rest of the graves contain single burials, the orientation being west-east and the head being towards the west except in the graves I and XIX, both of the last phase in which the skeletons were laid in east-west direction. The skeletons in each of the burials, except in two, have been laid in an extended position (Fig. 3,4.). In graves I and XXVIII the skeletons have been laid in flexed position. Placing of individuals in graves VIII and XI differ from usual practice followed by the Mesolithic people at the site. The skeletons in grave XI has been placed in prone position and in grave VIII it is in lateral position. Rest of the skeltons are in supine position. The graves ar shallow and oblong with tapeing sites. The length and width of the graves have been determined by the length and width of the dead to be placed in the grave. It has been noticed that in the proximity of almost each of the burial there is a hearth. Table I shows the phase-wise distribution of graves, orientation, sex and age of the skeletons excavated at Damdama.

**Table 1 : Human Skeletons at Damdama**

| Phase | Grave | orientation | Sex | Age | Excavated in year |
|---|---|---|---|---|---|
| I | XII | West-east | Female | adult | 1985 |

| Phase | Grave | orientation | Sex | Age | Excavated in year |
|---|---|---|---|---|---|
| II | XXXVIII | West-east | Male | old adult | 1987 |
| III | XVI double burial | West-east | Male | adult | 1985 |
| | XVII | East-west | Male | adult | 1985 |
| | XL | (not excavated) | - | - | - |
| IV | XI | West-east | Male | adult | 1984 |
| V | XX double burial | West-east | Female<br>Male | young adult<br>adult | 1986 |
| VI | XXII | West-east | Male | young adult | 1986 |
| | X | West-east | Female | adult | 1984 |
| | XV | West-east | Female | adult | 1985 |
| | IX | (disturbed) | - | - | 1984 |
| VII | XIV | West-east | - | - | 1985 |
| | XXVIII | North-west to South-east | Male | adult | 1987 |
| VIII | II | West-east | Male | adult | 1983 |
| | IV | West-east | - | - | 1984 |
| | V | West-east | Female | adult | 1984 |
| | VI double burial | South-north<br>North-south | Female<br>Male | adult | 1984 |
| | VII | West-east | Male | young adult | 1984 |
| | VIII | West-east | Male | adult | 1984 |
| | XVIII triple burial | West-east | Male<br>Male<br>Female | adult<br><br>adult | 1985-86 |
| | XXX double burial | west-east | Female | adult | 1987 |
| | XXXI | South-West to | Male | young adult | 1987 |

| Phase | Grave | orientation | Sex | Age | Excavated in year |
|---|---|---|---|---|---|
| | XXXIII | West-East | Male | adult | 1987 |
| XXXVI | double burial | west-east | Female<br>male | adult<br>young adult | |
| | XXXVII | West-east | Female | young adult | 1987 |
| | XXXIX | North-east to south-west | Male | adult | 1987 |
| IX | I | East-west | Female | adult | 1983 |
| | III | West-east | Female | adult | 1984 |
| | XIII | West-east | Female | adult | 1985 |
| | XIX | East-West | Male | adult | 1986 |
| | XXI | West-east | Female | - | 1986 |
| | XXIII | north-east to south-west | Female | adult | 1987 |
| | XXIV | North-east to south-west | Male | adult | 1987 |
| | XXV | North-east to south-west | Female | adult | 1987 |
| | XXVI | North-east to south-west | Female | young adult | 1987 |
| | XXVII | South-west to north-east | Male | adult | 1987 |
| | XXIX | South-west to north-east | Male | adult | 1987 |
| | XXXI | West-east | - | - | 1987 |
| | XXXIV | South-west to North-east | Male | adult | 1987 |
| | XXXV | West-east | - | adult | 1987 |
| | XLI | (not excavated) | - | - | - |

The excavations of burials here have brought to light clear evidence of building tumulus over the graves. The graves have yielded microliths, charred and semi-charred pieces of animal bones and bone objects. It can not definitely be said that all these artifacts were offered in the graves as burial goods. The possibility of these objects being present even before the digging of the graves can not be ruled out in view of the fact that the site was continuously under occupation. Some of the animal bones and microliths might have come along with the earth used for filling the graves to cover the dead. But there is hardly any doubt as in the cases of graves VII, XVI and XVII in which long arrow heads of bone have been found. In grave VII two arrow heads along with an ivory pendant having two holes on either end were found, placed near the foot of skeleton as burial goods.

The dead were buried within the habitation area gererally in the vicinity of hearths. The refuse material of hearths filled in the graves also associate the graves with fire. Possibly the Mesolithic people considered fire as life giving deity, after the death. Most of the burials are placed in extended position in shallow oblong pits except the two flexed burials.

How the double and multiple burials can be explained in respect of social significance and what was the reason for placing more than one individual in a grave? No definite answer can be given. The double burials contiaining one male and one female, it may be presumed, were the burials of husband and wife and thus may indicate concept of family in a hunting gathering society. However, the grave XVI at Damdama has revealed both the individuals of male sex. What was the social relation between these two? Can not be explained. The grave XVIII at Damdama contained the burials of three individuals, two males and one female. Relation among these skeletons also can not be definitely fixed. Skeletons of double or multiple burials were possibly members of the same family (Husband and wife or brothers) and they died by eating some poisonous food accidently. Thus these individuals were buried simultaneously. Such burials are possibly indicative of some social significance.

## REFERENCES

1. Sharma, G.R. 1973 Mesolithic Lake cultures in The Gagna Valley, India, **Proceedings of The Prehistoric Society**, Vol. 39, pp. 129-46.

1975 Seasional Migration and Mesolithic cultures of The Ganga Valley, **K.C. Chattopadhyay Memorial Volume**, Allahabad,

Kennedy, K.A.R., Lovell, N.C. and Burrow, C.B. 1986 **Mesolithic Human Remains from The Gangetic Plain** : Sarai Nahar Rai, Cornrell University.

2. Sharma, G.R., Misra, V.D. and Pal, J.N. 1980 **Excavations at Mahadaha**, Allahabad.

Pal, J.N. 1985 Some New Light on the Mesolithic Burial Practices of The Ganga Valley: Evidence from Mahadaha, **Man and Environment**, Vol. IX, pp. 28-37

3. Varma, R.K.; Misra, V.D., Pandey, J.N.; and Pal, J.N; 1985 A preliminary Report on The Excavations at Damdama, **Man & Environment**, Vol. IX, pp. 45-65

4. Pal, J.N. 1988 Mesolithic Double Burials from Recent Excavations at Damdama, **Man & Environment**, Vol. XII, pp. 115-22.

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# NEOLITHIC - CHALCOLITHIC CULTURES OF EASTERN U. P.

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Although Neolithic artifacts had been reported during surface explorations in the late nineteenth century from the Vindhyan foothills by British exploreres like Le Mesurier[1], Theobald[2], Cockburn[3] and Rivet-Carnac[4], a serious study of this culture started only in the seventies of this century with the excavation of sites like Koldihwa, Mahagara, Pachoh, Indari and Chopani Mando in the northern Vindhyas. The result of these excavations conducted by Prof. G.R. Sharma and his colleagues have not only been published[5] but have been widely commented upon by several scholars[6]. In the exploration carried out in the valleys of Belan, Adwa, Son, Rihand, Ganga, Lapari, Paisuni etc. more than 40 neolithic sites have been identified in surface exploration[7]. The emerging picture indicates a habitation having as much as two metres of cultural deposit (as in the case of Koldihwa and 2.60 metres of deposit in the case of Mahagara). Most of these neolithic sites are located on the banks of small rivers obviously because of easy availability of water and fertile land. The proximity of forests facilitated the people in exploiting the wild plants and animals. The people lived in thatched hutments generally having a covered area of about 15 square metres with well laid out floors. Remains of as many as 20 huts have been excavated from Mahagara. The cattle-pan exposed at Mahagara with cluster of hoof imprints of cattle of different age groups gives an idea of the herding of animals by the neolithic folk which comprises cattle, sheep, goat, horse, deer and wild boar of which the first four seem to have been domesticated[8]. The botanical remains indicate that rice was widely cultivated in the area and rice husk was used as degressant in the pottery. The wild rice (Oryza nivera) from Koldihwa, Mahagara and Indari and bone fragments of deer, antelope, bear and birds suggest that hunting and collecting of wild food was as important as domestication and cultivation[9]. Rice husk used in the paste of pottery shows that the rice belongs to cultivated variety which on the basis of the C-14 dates obtained from the neolithic deposits (7th-5th millennium B.C., 6570 B.C.), provides the earliest evidence for rice cultivation in the sub-continent[10]. However, doubts are being raised regarding the stratigraphic position of the three charcoal samples giving high dates (5440 B.C., 4530 B.C.) and it is suggested that the charcoal comes from a fire-pit belonging to the pre-neolithic strata. These views of Pal have also been shared by Desmond Clark[11] on the basis of his excavations at Kunjhun II in the Son Valley of Madhya Pradesh. The other concomitants of neolithic culture are ground stone tools (including celts), microliths and hand-made pottery.

In recent years a claim has been made about the advance of Vindhyan neolithic and chalcolithic cultures to the Sarayupar plains. The evidence comes mainly from Sohagaura situated on the confluence of Ami and Rapti rivers in Gorakhpur district[12]. Here Period I, having a cultural deposit of 70 cm, is said to contain relics of a neolithic culture having hand-made cord-impressed and rusticated potteries and plain red ware of coarse and medium fabric. The antiquities are not many and the only object reported is a fragmentary baked terracotta discoid object of indeterminate use with a lenticular section and a diameter of 13.5 cm[13]. It may be noted that the evidence comes from a very small area, less than quarter of a 5 metre square trench. Prof. Chaturvedi has reported similar pottery (cord-impressed ware) from four other sites, namely, Susipar, Ramnagar Ghat, Gerar and Lahuradeva, all in the Basti district. It may be noted that a solitary polished stone celt along three pieces of a deep bowl of cord-impressed pottery was found from the lowest levels of Narhan[14]. But rusticated ware does not seem to be a part of this assemblage. Hand- made pottery together with other ingredients of Narhan culture has been reported from Dhuriapar, located on the left bank of the Kuwana in Gorakhpur district in the summer of 1991[15]. Archaeological investigations conducted in districts Pratapgarh have yielded well documented Mesolithic settlements on the banks of horse-shoe shaped lakes. Thus the area between Pratapgarh and Basti needs to be intensively explored with a view to locating vestiges of early farming settlements.

Taking stock of the present-day research on the Neolithic of eastern U.P., it may be said that our knowledge regarding the neolithic cultures is far from complete mainly because of lack of systematic and sustained field work. Our present-day knowledge is derived from a handful of diggings on a very limited scale. Secondly, a reconstruction of the life-style and the subsistence pattern of the Neolithic inhabitants is not possible to a great extent largely because of lack of data and expertise. The study of Neolithic cultures is largely confined to the typological study of stone tools and pottery. Archaeobotanical data and osteological remains of animals have not been properly collected or studied. This is largely because of lack of expertise in these branches of learning. Vishnu-Mittre followed by K.S. Saraswat and G.M. Buth have been doing pioneering work in this direction in recent years but the same cannot be said of the study of animal bones.

The third problem haunting our mind is the admittedly very late dating of the Indian Neolithic as compared to similar cultures in south western Asia or south eastern Asia. Mehrgarh in the Kachi plain of Baluchistan is the only site whose beginning goes back to the seventh millennium B.C. and may be called an younger contemporary of early farming cultures of western Iran and the hilly flanks of Zagros. The two radio-carbon dates from Koldihwa in the Vindhyas fall between the time bracket of 6700-4500 B.C. but as stated earlier, the Charcoal samples in question are now said to come from the pre-Neolithic strata at the site. Barring these two sites we have more than fifty dates from as many as fifteen sites from all over the country and all of them consistently fall between 2400 and 1700 B.C. What is the reason for such a late dating of the Neolithic in this sub-continent is far from clear. Are we dealing here only with cultural backwaters of the Neolithic?

It is well-known that similar cultures in western Asia as well as in south-east Asia go back to the seventh-eighth millennium B.C. and earlier. Thapar[16] thinks that it may have been the result of several factors including the level of exploitative technology, environment, a late continuance or survival of the Mesolithic economy etc. It is also partly due to the fact that we have not yet investigated the antecedent stages of the food-producing economy, especially with reference to the domestication of plants and animals, climate, ecology etc. in each region of this sub-continent and the possibility of the existence of such an early stage cannot be ruled out in the present state of research.

## CHALCOLITHIC CULTURES OF U.P.

The succeeding phase of development in the archaeology of Uttar Pradesh is marked by several clusters of chalcolithic cultures such as the chalcolithic of the Vindhyas marked by such sites as-Koldihwa and Kakoria (and the pre-NBP levels of Sringverpura, Kausambi (Period I), Rajghat, Prahladpur, Kamauli etc. A new culture marked by profusion of white painted black-and-red ware and designated as 'Narhan Culture', also identified at other excavated sites like-Sohagaura and Khairadih, has been brought to light in the Sarayupur plain. Perhaps under this group will fall the explored sites of Basti, like, Gulrihwaghat, Banwarighat, Lahuradeva and others. Besides, there are as many as thirty sites found in surface exploration in the district of Allahabad, Pratapgarh, Jaunpur and Sultanpur. These have short blade microlithic industry and potteries like red, black slipped and black- and-red ware which are similar to Koldihwa-Kakoria complex. The prominent among them are Kanja Sarai-Gulani, Puredeojani, Pelkhawar, Bhervani (all in Pratapgarh district); Akhau (in Jaunpur district) and Ohaur and Unchdih in Allahabad district[17]. The salient features of each cluster of sites are enumerated below.

## (1) The Koldihwa-Kakoria Group

The Chalcolithic sites in the foot hills of Vindhyas extend from the Karmnasa in the east to the Paisuni in the west covering the districts of Varanasi, Mirzapur, Allahabad and Banda of southern Utter Pradesh. These are characterised by microliths, bone tools (arrowheads), a few copper objects and ceramic industries like the red, black-and-red and black slipped wares. The excavated sites are Kakoria, Koldihwa, Banemilia Bahera, Magha, and Mangiri. The former site has a tradition of Megalith building comprising cairn circles and cist within a cairn, which persists in the Iron Age, early historical culture of this region. The economy of this culture has not been worked out in detail except in the case of Koldihwa which has evidence of the cultivation of rice. Bones of animals like-cattle, sheep, goat, deer, stag, pig etc.; some of them having cut-marks, have been indentified which indicate that meat and fish constituted the diet of the people alongwith cereals. The inhabitants lived in wattle and daub houses having plastered screen walls of reed and bamboo. That the inhabitants believed in the existence of life after death is indicated by the cairns and cists having grave goods like pottery, microliths, a few copper fragments and fragmentary animal bones. Pal has attempted to delineate two stages of this culture i.e., early and late, represented by Kakoria and Koldihwa respectively. He argues that the second stage of chalcolithic culture may be bracketed between 1500 and 800 B.C. and the Kakoria stage may be slightly earlier than 1500 B.C.[18]. Further east, an extension of this culture has been identified at several sites of Chandraprabha region (around Naugarh in Chakia tehsils of district Varanasi) and one of these eites, Takiapar was partly excavated but details regarding this are wanting. In a small-scale dig at Kamauli on the left bank of the Ganga about 4 km. east of Rajghat some microlithic tools in association with an ochrous red ware were found way back in 1964 presumably indicating the northern extremity of this culture.

The second complex of protohistoric sites comprises Sringaverpura[19] Period I, Kausambi Period I and several explored sites in districts of Allahabad, Pratapgarh and Jaunpur noted above. The earliest deposit of Sringverpura dated between 1050-1000 B.C. is marked by red ware having vague resemblance with ochre colour ware. Burnt earth clods with reed impressions suggest the existence of wattle and daub structures. A small fragment of a flake of carnelian obtained from these layers may be a remote pointer towards the chalcolithic origin of this culture. Potsherds from the earliest layer (19E) have been dated by TL method to 3015 ± 280 B.P.; 2855 ± 270 B.P. and 2900 ± 380 B.P. Thus Period I has been assigned to circa 1050 - 1000 B.C. This culture was succeeded by the deposits of Period II dated between 950 and 700 B.C. This period is characterized by black slipped, black-and-red, burnished grey and associated red ware. A few sherds of the famous PGW occurring in the earliest levels of this period suggest a stage of contact between the PGW culture and the BSW culture in this area early in the eighth century B.C.[20]. Points and barbed arrowheads of bone, a bone pendant and beads of terracotta, jasper and gold are the other antiquities. It may be noted that a large number of bone points have been recorded from Period II at Narhan which is almost contemporary in point of time. This period was succeeded by the NBPW culture dated between 700-200 B.C.

The culture sequence at Kausambi is too well-known to be enumerated. Suffice it to mention that the early dating of Kausambi has been challenged by several scholars[21]. Hence, not much can be said with any amount of certainity about the cultural outfit and chronological position of the earliest period originally dated between 1165 B.C. and 805 B.C.

The other sites of districts Allahabad, Pratapgarh and Jaunpur are known through surface explorations only and unless some of these are excavated on an appreciably large scale, not much can be said about them.

The third complex of chalcolithic settlements termed 'Narhan Culture' by us on the basis of our five seasons work at the type-site on the left bank of the Ghaghara is comparatively better known. Remains of this culture are now found to extend over a wide area mainly comprising Basti and Gorakhpur districts and partly extending in the adjoining Azamgarh, Deoria and Ballia districts. The distribution of the sites of 'Narhan Culture' will be properly understood when the smaller tributaries of the Sarayupar plain like the Kuwana, the Ami, the Manwar, the Gorra, the Majhne etc. are thoroughly explored. Details regarding various facts of Narhan Culture have been extensively published [22]. Howeveer, the salient features of this culture can be enumerated as follows.

Our excavations have revealed that the Narhan Culture people were the first inhabitants of this region who cleared the area and made their first settlement of wattle and daub houses having well laid out floors and ovens etc. The principal ceramic indusry was white painted black- and-red ware which accounted for as much as 74% in the lowest levels, but reduced to 58% in the upper levels. The other associated wares are black slipped ware (typologically different from the usual black slipped ware associated with the NBP). Some of the sherds in this ware also have painted linear designs in white or cream colour. The other wares are red slipped and the ordinary red ware, some of which have liner painted design done in black colour. The economy of this culture was based on agriculture supplemented by hunting and fishing. Cereal grains of hulled and six row barley, club wheat, bread wheat, dwarf wheat, and cultivated rice have been identified. The pulses included pea, green gram,/chickpea and khesari besides mustard oilseeds and flax/linseed. Seeds of jack fruit found from these levels is an important discovery. Jack fruit grows wild in the western ghats and was taken to cultivation in north India. The present evidence suggests that the inhabitants of Narhan culture cultivated it for its fruit. Although the first settlers practised agriculture, meat was an important component of their diet as is evidenced form the presence of a large number of charred animal bones and antlers, some of them having cut-marks. In a limited collection of about 15% animal bones excavated during 1984-85 from Period I bones of humped Indian cattle, sheep, goat, remains of a wild ruminant like deer or antelope and horse have been identified. A significant omission is the total absence of the lithic component (microliths). Hence, the appelation 'Chalcolithic' cannot be applied for this culture.

The Narhan Culture can be dated between 1300 B.C. - 800 B.C. as indicated by the two radio-carbon dates of this site which read 1100 ± 110 B.C.

and 1060 ± 110 B.C. This is also confirmed by the two dates of Sohagaura and three dates from Khairadih[23] coming from the corresponding levels.

## REFERENCES

1. Le Mesurier, H.P. 1861 in **Proceedings of Asiatic Society of Bengal**

2. Theobald, W. 1862 Celts found in Bundelkhand, **Proceedings of The Asiatic Society of Bengal.**

3. Cockburn, J. 1879 Notes on Stone Age Implements from Khasi Hills and the Banda and Vellore Districts, Journal of the Asiatic Society of Bengal XLVIII, pt.2.

4. Rivett-Carnac, H. 1882 Stone Implements found in Bundelkhand, **Proceedings of the Asiatic Society of Bengal**

5. Sharma, G.R. et al 1980 **Beginnings of Agriculture**, Abinash Prakashan, Allahabad.

Singh, P. 1987 Neolithic Cultures of northern and North-Western India **Archaeology and History**. (Essays in memory of Shri A. Ghosh). vol. I. edited by B. Panday and B.D. Chattopadhyaya, Agam Kala Prakashan, New Delhi, pp. 255-263.

1987(b) Coins found in Narhan Excavations. **Numismatics and Archaeology** (eds.) P.L. Gupta and A.K. Jha, Indian Institute of Research in Numismatic study, Nasik, pp. 86-88.

6. Pal, J.N. 1986 **Archaeology of Southern Uttar Pradesh**, Swabha Prakashan, Allahabad.

1989 The Neolithic cultures of the northern Vindhyas and the middle Gangetic plain, Paper presented in the **National Seminar on Archaeology in Eastern India**, Bihar Puravid Parishad, Patna.

Singh, P. 1987 op. cit.

7. Pal, 1986 op.cit., pp. 36-38

8. Sharma et. al. op.cit, p. 189

9. Pal 1989 op.cit.

10. Chang, T.T. 1986 Domestication and spread of the cultivated rices, **Recent Advances in the understanding of Plant Domestication and early Agriculture**, Southempton.

11. Clark, Desmond, J. & Gurucharan S. Khanna 1989 The site of kunjhun II, middle Son Valley and its relevance for the Neolithic of Central India, **Old Problems and New Perspectives in The Archaeology of South Asia**, edited by Jonathan Mark Kenoyer, Wisconsin Archaeological Reports, vol. 2, pp. 29-46.

12. Chaturvedi, S.N. 1985 Advances of Vindhyan Neolithic and Chalcolithic cultures to the Himalayan Tarais, **Man & Environment**, IX, No. 101-108.

13. Ibid p. 103

14. Singh, P. 1988 a Narhan 1985-87: Second Preliminary Report of Archaeological Excavations, **Archaeological Studies**, Banaras Hindu University, Varanasi. Pl.IIB, Fig. 6.

15. Singh, P. 1991 Trial Digging at Dhuriyapar, **Pragdhara No.2**

16. Thapar 1985 Fresh Light on The Neolithic Cultures of India, **Archaeological Prespective of India since Independence**, (Ed. K.N. Dixit), Books & Books pp. 37-43.

17. Pal 1986 op.cit., p.22.

18. Ibid p. 61

19. Lal, B.B. & K.N. Dikshit 1978-79 Sringverpura: a key site for The protohistory and early history of the central Ganga Valley, **Puratattva**, No. 10, pp. 1-7

20. Ibid p.4

21. Ghosh, A. 1973 **The city in early Historical India**, Simla, Indian Institute of Advanced Study.

Dikshit, K.N. 1979-80 Is The early pottery from Kausambi Harappan? **Puratattva No. 11**, pp. 103-105.

Lal, B.B. 1984-85a The so-called Syenchiti at Kausambi : A fallen brick-mass, Puratattva No. 15, pp. 94-98.

1984-85b When did udyan rule? An assesment of the dating of the place complex at Kausambi, Puratattva No. 15, pp. 80-85.

22. Singh, P. et at.

1983-85 Narhan 1983-85 : A Preliminary report of Archaeological excavations, **Bharati**, New Series, No.3, pp. 113-188;

1985-86 Narhan ka Puratatvik Adhyayan (Hindi), **Dhyanam,** pp. 71-76;

1986-87 The 1985 Excavations at Narhan, **Bulletin of the Indo-Pacific Prehistory Association**, No.7, Canberra, pp. 27-30;

1988 b op.cit. Painted Black-and red ware form Narhan, **Man & Environment**, vol. 12 : pp. 17-21 :

1989 The Narhan Hoard of Punch marked coins : A preliminary report, **Proceedings of the 10th International Congress of Numismatics**, London, 1986 (eds.) I.A. Carradice and Others, London, pp. 465-470.

23. Singh, B.P.

1987-88 Khairadih-A Chalcolithic settlement, **Puratattva No. 18**, pp. 28-34.

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# CHALCOLITHIC CULTURE OF EASTERN UTTAR PRADESH

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The present paper seeks to high light the nature of pre NBP deposit in eastern Uttar Pradesh, and its comparative study with the known chalcolithic cultures of the adjoining region (Vindhyan area, north and south Bihar) to ascertain its status in this part of the country as the use of the term Pre-NBP' is a misnomer. These deposits can be grouped into two categories:

1. Pre-NBPW iron age deposit
2. Pre-N.B.P.W. deposit devoid of iron.

The sites belonging to the 1. are Rajghat[1] IA, Prahladpur[2] IA and Sarai-Mohana[3] IA, while Khairadih[4] I, Narhan[5] I and Sohgaura[6] II-III belong to the 2. category. Both 1. and 2. are characterised by the occurrence of black-and-red ware (plain as well as painted), black slipped ware (plain as well as painted) and red ware (slipped and unslipped both). In addition to the above the cord impressed, rusticated and burnished black wares are associated with the deposit of 2. category. Linear motifs are common to both, but painted specimens in the former is neglegible while it is profuse in the latter. Decorated terracotta discs are confined to the deposit of the 1. category. Similarly the earlier forms like the channelled or lipped bowls, dishes-on-stand and pedestal bowls are characteristic shapes of the latter deposit.

Here our main concern, however, is with the sites related with the deposit of the 2. category, We know that the chalcolithic culture of the region is represented by the material remains recovered from the excavations of Sohgaura which is located in district Gorakhpur. Since the work was done on limited scale, hence our emphasis will be on the results of Khairadih and Narhan. Excavations conducted by the department of Ancient Indian History Culture and Archaeology, B.H.U., at the above mentioned two important sites brought to light important pre-NBP remains favourably comparable with the known chalcolithic cultures of the adjoining regions viz., Chirand[7], Taradih[8] in north Bihar, Senuwar[9] in south Bihar and Koldihwa[10] in southern U.P. Khairadih (lat. $26^0$ 10' N, Long .$83^0$ 51' 30" E) is situated on the right bank of the river Ghaghra in district Ballia while Narhan is situated on the left bank of the same river in district Gorakhpur. Material culture recovered form the earliest Period I from both the sites are the same, save for a few local variations.

At both the sites this phase is characterized by the occurrence of black-and-red ware (plain and painted), black slipped ware (plain and painted), red ware (both slipped and unslipped occasionally painted with dull white pigment), burnished black ware, cord impressed pottery and rusticated ware. The last three wares are found in limited number. It may however, be mentioned that Sohgaura also witnessed the presence, of above wares in the chalcolithic deposit. At Narhan the painted black slipped ware is meagre, the prominent ware being the painted black-and-red ware. About twenty percent painted sherds in the ware are reported[11]. On the contrary, the painted black slipped ware is the prominent industry at Khairadih.

Other common notweorthy finds found at Khairadih, Narhan and Sohagaura constituted beads of agate, chalcedony, carnelian, jasper, steatite, socketed and tanged arrow-heads of bone, points, pottery discs etc. Terracotta beads decorated with incised designs are common to both Khairadih and Sohgura. At Khairadih the use of glass is attested by the presence of a microbead of blue glass[12] while at Narhan a polished celt is reported[13]. The presence of a socketed copper arrowhead, an indeterminate object, a wire, a rod and a copper piece respectively found at Khairadih, Narhan and Sohagaura suggests the scarce use of the metal. Noteworthy point which needs our attention is the complete absence of lithic tools at these sites which is considered an essential chalcolithic appellation.

The field survey conducted in the region by different institutions and the state archaeology department resulted in the discovery of many sites yielding related ceramic industries and material remains as recovered from the excavated sites of Sohgaura, Khairadih, Narhan, Koldihwa on the one hand and Senuwar, Chirand and Taradih on the other. Among noteworthy explored sites are Imlidih, Sikridih in Gorakhpur[14], Brahmapur, Lalmanpur[15], Nahusa-ka-tila[16] in Azamgarh, Dharhni[17], Fatehpur Atwa[18] and several other sites in Ghazipur[19], Akahwa[20] in Jaunpur, Itwa, Kanpa[21] and several other chalcolithic sites in Pratapgarh[22] district needs mention. Besides the above, many sites of black-and-red ware are reported in districts Ballia, Deoria, Basti and Gorakhpur[23]. Since no other find, even the associated pottery is not mentioned by the field workers one finds it difficult to associate the ware with any particular phase. Whether they belong to pre-NBP or NBP deposit connot be said with any certainty on the available information.

Here in this context the recent explorations conducted by the present author in districts Basti and Sidharthanagar[24] and by Prof. P. Singh along the Kuwana river[25] needs special mention. The present exploration in district Basti revealed that pre-NBP settlements are less in number. Important sites which need mention at this place are those of Gulrihvaghat[26], Madahi[27], Pingesar in Haraiya tahsil, Lohra Dewa[28], Ammadei and Karuhi[29] in Khalilabad tahsil. Leaving the third mentioned site which has yielded suspected evidence of black-and-red ware deposit, the cultural assemblage obtained from the remaining sites favourably correspond with Sohgaura-Khairadih-Narhan complex on the one hand and Koldihwa, Chirand, Taradih and Senuwar on the other.

Besides the above some other sites in district Basti have also been explored earlier and some of them have been claimed as Neolithic. Among such sites are Susipar, Lohra Dewa, Ramnagarghat, Gerar and Bargo[30]. The cord impressed pottery is found from these sites which is also reported form Sohgaura, Koldihwa, Mahagara, Kunjhun and Lalanhiya and hence neolithic deposit in the earliest level at these sites of Basti is surmised.

It is true that cord impressed pottery is an important neolithic cultural trait of Vindhyan region as well as north and south Bihar as evidenced at Chirand, Taradih and Senuwar. But presumption of neolithic culture on the mere occurrence of cord impressed pottery would be misleading. In fact, a more appropriate approach would be to consider other cultural traits also instead of giving prominence to one feature. As we know that this pottery is associated with chalcolithic and in a limited number with NBPW phase deposit as well as evidenced by the excavations of Khairadih, Senuwar and Narhan. Even on the presence of polished celts one cannot say with any certainty the existence of neolithic deposit at any site as it continued upto the Kushan times[31].

Further, the suggestion that two phases of chalcolithic culture viz. Kakoria-Magha phase and Koldihwa phase as proposed in the Vindhyan region is represented in eastern U.P. also needs our attention in the light of the evidence obtained from the excavations of Khairadih, Narhan and the corresponding excavated sites in north and south Bihar. The five seasons work at both the sites did not reveal any separate horizon of unpainted and painted pottery group in the Period I deposit as suggested at Sohgaura[32], in spite of the fact that the cultural assemblage of Khairadih I, Narhan I and Sohgaura II-III are the same. In fact the evidence of Sohgaura II, which is suggested to correspond Kakori-Magha phase, clearly revealed the presence of painted pottery and the shapes like dishes-on stand, perforated footed bowls etc., belong to the second chalcolithic stage represented by Koldihwa group of pottery. The main difference noted between periods II and III is that the latter is characterised by the occurrence of painted black- and-red ware, the ceramic assemblage otherwise appears to be same. It may be noted here that Khairadih and Narhan are not far off from Sohgaura and fall within the same cultural zone. How then such a distringuishing chalcolithic feature occurring at one site and absent on the remaining neighbouring settlements (?). Similar evidence as noted at Khairadih and Narhan is also witnessed in Bihar sites viz., Chirand, Champa[33], Oriup[34], Taradih, Chechar-Kutubpur[35], Maner[36] and recently excavated site of Senuwar. None of the excavated sites revealed two horizons in the chalcolithic phase as referred to earlier. The Kakoria-Magha chalcolithic phase which is considered earlier in view of the fact that the pottery is unpainted appears to be confined in Vindhyan region alone. The lone example from Sohgaura in the entire middle Ganga plains must be re-examined in the light of the evidence reviewed just above.

Summarizing the evidence, it is evident that the culture in eastern U.P. as represented by Sohgaura-Khairadih-Narhan complex is characterized by the plain and the painted pottery consisting of black-and-red ware, black slipped ware, burnished black ware, red ware (slipped and unslipped), cord impressed and resticated pottery. The occurrence of the above ceramic industries in the known chalcolithic level at Senuwar, Chirand, Taradih, Koldihwa etc., is a clear indication that the culture is chalcolithic in nature.

The pottery recovered from Sohgaura-Khairadih-Narhan complex and explored sites of the region under study show striking similarity both in fabric and forms with those found at Chirand, Taradih, Senuwar and Koldihwa and affords the greatest analogies. Correspondence in shapes between sites of eastern U.P., Bihar and Vindhyan region (Koldihwa) are amply attested. Particular mention in this regard may be made of pedestal bowls, dish-on-stand, deep bowl with everted rim, convex sided bowl, perforated footed bowl, channelled or lipped bowl, shallow bowl of varying profiles, basin with splayed out rim, vases with vertical neck having featureless rim, with long concave neck, with carinated neck and flared rim in the red ware, the black-and-red ware, and the burnished black ware, and straight sided bowls, convex sided bowls, corrugated bowls, flanged bowls, carinated bowls, funnel shaped lid or bowl, dishes of varying profiles and capacity in the black slipped ware. At times the similarity being so close, both in form and fabric that a type from a particular site can hardly be separated from its counterpart from the other site. In the light of the above evidence it is reasonable to suggest intercourse between sites of each regions.

From a comparative study of the different ceramic industries and pottery-types represented at the excavated and explored sites in eastern U.P. referred to earlier and sites excavated in northern Bihar (Chirand), southern Bihar (Senuwar) and Vindhyan region (Koldihwa), a family likeness is indicated linking one regional industry with the other suggesting thereby one integral culture or developments of a common pattern.

The occurrence of identical painted sherds and specimens with rusticated exterior surface in the black slipped ware, incised criss- cross design on the sliped red ware sherds, pin-hole decoration and black-on-red painted pottery are other precise noteworthy evidence which acclaim cultural link between Sohgaura, Khairadih, Senuwar and Koldihwa.

The use of white or cream pigment and the adoption of monotonous linear patterns for painting earthen wares would indicate a basic unity in this painted pottery groups in eastern U.P., northern and southern Bihar and part of Vindhyan region. The evidence, however, obtained from Sohgaura is an exception where the black-and-red ware recovered from Period III in some instances are painted with red ochre and in some cases with white pigments. The use of the former suggest impact of elderly neolithic culture. The evidence from Senuwar I affirm the view as sherds with incised designs filled with red ochre are also met with at the site. This view further assume significance in the light of the occurrence of rusticated and cord impressed pottery which are considered charateristic traits of the neolithic culture. Here it would be not out of place to mention that the evidence obtained from Senuwar clearly revealed that the chalcolithic culture gradually evolved from the preceding neolithic culture with certain innovation[37]. Similar development from neolithic to chalcolithic is evidenced at Koldihwa also[38]. Although the results of excavations at Sohgaura in this regard presented a nebulous picture, the continuation, however, of 'the earlier tradition of the corded and the rusticated ware[39], might indicate similar development as noted at Senuwar and Koldihwa. It may thus be inferred that chalcolithic culture in the middle ganga plains evolved out of the elderly neolithic culture.

A study of the material culture further revealed common features in their assemblage. The objects used by these people in general are limited in each region and included beads of semi-precious stone, steatite, glass, terracotta, querns, pestles of stone, bone tools mainly comprising of points, arrow-heads etc., and an extremely limited quantity of copper objects. In view of the entire evidence the culture is homogeneous in the regions under review. The village character of the culture is reflected in each regions.

The overall picture thus produced by the material equipment obtained from Sohgaura-Khairadih-Narhan complex is that of a prosperous agricultural community living in small to medium sized villages.

On the basis of the available evidence it is inferable that there is a regular chalcolithic settlement spread in middle ganga plains and parts of Vindhyan region. That the duration of this phase is fairly long as at most of the sites the occupational thickness ranged from 1.5 m to over 2 m. The c14 dates available from Sohgaura (1330 ± 110 B.C. and 1230 ± 130 B.C.), Khairadih (3070 ± 90 B.P., 1030 ± 160 B.C. and 940 ± 150 B.C.) and Senuwar 1210 ± 120 B.C. suggests the beginning of this culture in eastern U.P. and in the middle Ganga plains around 1300 B.C. which continued till the introduction of NBPW.

Among the point of difference noted particularly at the explored and excavated sites of eastern U.P. is the complete absence of lithic tools which is an essential chalcolithic appellation. It is surprising to note that during the course of exploration in districts Basti and Gorakhpur none of the site yielded microlith. The absence of lithic tools on the sites of eastern U.P. is possibly due to the reason that the stone is not readily available in the region. But the presence of copper, ceramic industries (with a few local variations), pottery shapes and material culture exhibiting striking similarities with the known chalcolithic cultures of the adjoining region testify to the exhistance of a comparable chalcolithic phase at the sites of eastern U.P. Elsewhere the culture has been designated as 'Narhan Culture' without assigning any valid reason[40].

The pre-NBP iron age deposit probably represents a transition stage between chalcolithic and iron age culture. The view that the painted black-and-red ware of the chalcolithic culture co-existed with iron age black-and-red ware for some time and that there was no gap between the chalcolithic culture and the early historical period (NBP) seems to be correct[41]. The presence of decorated terracotta discs, grey ware of the same fabric as that of the painted Grey ware but without painting and several shapes comparable with the painted Grey ware level would indicate direct impact of the culture around 800 B.C.

It is observed that the NBPW culture is preceded by the chalcolithic culture in middle Ganga plains, but no such evidence is found so far in Vindhyan plateau[42]. That the NBPW culture shows a gradual development from previously existing chalcolithic culture in southern Bihar and eastern U.P. as evinced by the excavations of Senuwar and Khairadih. At both the places there is an overlap between the chalcolithic and NBPW deposit.

## REFERENCES

1.Narain, A.K., & Roy, T.N.,1976 **Excavations at Rajghat**, Varanasi p.22.

2. Narain, A.K., & Roy, T.N.1968 **The Excavations at Prahladpur**, Varanasi, pp. 17, ff.

3. **IAR 1967-68**, pp. 48-49

4. The Period I (pre-NBP) deposit is superimposed by successive deposits of Period II (characterized by the introduction of NBPW and iron) and Period III (Kushan period) yielding a continuous sequence and remains of early historical period, preliminary details of which are reported elsewhere. See IAR 1981-82, pp. 67-70, 82-83, pp. 92-94, 83-84, pp. 86-87. For further details about period I see also Singh, Birendra Pratap, 'Khairadih-A Chalcolithic Settlement' **Puratattva, No. 18**, pp. 28-34. Pre-NBP deposit of Period I was brought to light during the session 1981-82.

5. Singh, P., and Lal, M., 'Narhan 1983-85: A Preliminary Report' **Bharati**, New series, No. 3, pp. 120, ff. also Singh, P., " Saryupar ke Puratattva Par Naya Prakash: Narhan Utkhanan" 1987,**Research Journal Faculty of Arts**, B.H.U., pp. 82-84.

6. IAR **1961-62**, p. 56, 74-75, pp. 46-47, see also Chaturvedi, S.N. "Advance of Vindhyan Neolithic and Chalcolithic Cultures to the Himalayan Tarai: Excavation and Explorations in the Saryupar region of Uttar Pradesh" **Man and Environment**, vol. IX (1985), pp. 101-108.

The second season's (74-75) work revealed five cultural periods at the site. Of these, periods I and II respectively belong to Neolithic and Chalcolithic and remaining to NBP and post NBP phases. Later on in an article presented by the excavator in the year 1985 referred to above, instead of five, six cultural periods have been declared. He demarcated two stages in the chalcolithic culture after a lapse of nearly a decade. According to the excavtor periods II and III at Sohgaura is chalcolithic, the former corresponding to Kakoria-Magha phase while the latter to Koldihwa phase. The pottery of this period includes black slipped, black-and-red, burnished grey and red wares. The cord impressed and rusticated pottery of the preceding neolithic period continued. Paintings are limited to black slipped ware alone. Noteworthy shapes encountered in the different wares are vases, dishes-on-stand, perforated footed bowl. Other antiquities of the period included muller and bone ring. The presence of copper and lithic tools are not mentioned even then the period is designated as chalcolithic I. Period III, belonging to the same cultural phase as the Period II, is characterized by the tradition of painted pottery. This period represents the second stage. The paintings have been classified into two groups in a chronological order. The first group consists of rows of dots and dashes in ochre colour usually confined to incised spaces and rows of short strokes in white pigment. The second group of paintings available from the upper levels of the deposit, is executed mainly on the black-and-red ware'. The shape in the black-and-red ware is limited to bowls including lipped one. There is no change in the black slipped ware. Among noteworthy pottery is the presence of black-on-red ware.

Other finds of the period included bone arrow-head, point, a copper rod, a copper piece, beads of terracotta, jasper, agate, carnelian, steatite and a terracotta wheel. The nature of stone implenent is not mentioned. In none of the report presence of microlith is mentioned. In non of the report presence of microlith is mentioned. There are two C14 dates one from the lower level reading 1330 ± 110 B.C. and other from the middle level 1230 ± 130 B.C.

**7. IAR** 1971-72, p.6, Verma B.S., 'Black-and Red ware in Bihar' Potteries in Ancient India, pp. 102-110, also Srivastava, K.M., Community Movements in Proto-Historic India, pp. 97-98, figs. 47-50.

**8. IAR** 1981-82, pp. 10-11, 1983-84, pp. 12-13.

On the basis of two seasons (81-82 and 83-84) work Period I at the site is chalcolithic. It is characterized by the occurrence of black- and-red, red and black wares. Quite a few sherds of these wares bore linear white paintings. Main pottery types included dish-on-stand, bowl, bowl with pedestal base, bowl with globular or ovoid body, perforated bowl, dish, jar with sharp carination at the neck and flared out rim etc. Among other objects associated with the culture are a neolithic celt, carnelian blade, quern, pestle and hammer of stone, points, chisels, tanged as well as socketed arrow-head of bone, copper fish-hook etc. In the subsequent season's work **IAR 1984-85**, pp. 9-10) a separate neolithic horizon has been identified by the excavators and as such periods I and II are neolithic and chalcolithic respectively at the site.

9. The site of Senuwar (Lat. $24^0$ 56' N, Long. $83^0$ 56' E) is located in district Rohtas, Bihar. The two seasons (1986-87 and 89-90) work conducted by the author, under the auspices of the department of A.I.H.C. and Arch., B.H.U., brought to light deposits of four cultural periods-I-IV. I, neolithic, II, chalcolithic, III, NBPW phase and IV, Kushan. The earliest Period I is divisible into two sub-peiods IA and IB. IA. Is marked by the presence of copper and thus has been regarded as neolithic-chalcolithic. Both sub-periods IA and IB, however, showed cultural continuity. Period II is

chalcolithic in character, accounting for a total thickness of 2.30 m. occupational deposits. It is represented by i) unslipped and slipped red ware (the latter being plain and painted), ii) black-on-red ware, iii) black-and-red ware (plain-as well as painted), iv) black slipped ware (plain as well as painted), v) burnished black ware (plain as well as painted), vi) cord impressed pottery and vii) rusticated pottery.

Among noteworthy copper objects included bangle, tool of an indeterminate use, pin (?), ear-ring (?), pendant (?), Copper pieces and a potsherd in which a layer of copper is found still adhered throughout on its inner surface. The lithic assemblage consisted of marginal retouched bladelet, partly backed bladelet, flakes, blades and cores. The material employed for manufacturing these tools are chalcedony and chert.

Besides, polished stone axes, hammers, rubber stones, pestles,sling balls, sharpeners, discs, **Ukhali**, beads of agate, chalcedony, faience and steatite are also found. The bone tools comprised of borer, point, needle (?), chisel and arrow-head both socketed and tanged. Among objects of terracotta mention may be made of beads decorated with incised designs, animal and bird figurine, hop-scotch, stopper etc. Recovery of grains by floatation method, in collaboration with BSIP, represented by Dr. K.S.Saraswat was obtained. The associated strata yielded evidence of the following crops, Rice *(Oryza sativa)*, barley *(Hordeum ·vulgare)*, Dwarf-wheat *(triticum sphaero coccum)*, Bread wheat *(T.aestivum)*, Sorghum-millet or Jowar *(Sorghum bicolor)*, Chick-pea *(Cicer arietinum)*, Green gram or mung *(Vigna radiata)*, Field-pea *(Pisum arvense)*, Lentil (Lens culinaris), Horse-gram *(Dolichos biflorus)*, Grass-pea *(Lathyrus sativus)*, oil seeds belonging to Sesame or til *(Sesamum indicum)* and Linseed *(Linum usitatissimum)*.

Weed and wild taxa: wild ju jube *(Ziziphus nummularia)* Vetch *(Vicia sativa)*, a grass belonging to Cenchrus cillaris. Seeds of a wild shrub Perilla ocimoides have also been found .

10. Pal, J.N., 1986, **Archaeology of Southern Uttar Pradesh Ceramic Industries of Northern Vindhyan**, Allahabad, pp. 131, ff, see also **IAR-1971-72**, p. 44. According to the excavators the

assemblage of Koldihwa Compares well with its counterparts at Kakoria on the one hand and Chirand on the other. Prahladpur on the Ganga also offers some parallels.

11. Singh, P., op.cit., 1987, p. 84

12. **IAR 1982-83**, p. 93.

13. Singh, P., op.cit., 1987, p. 84.

14. Singh, P., Singh, A.K., and Singh, I.J., 'Exploration along the Kuwana river in Districts Gorakhpur and Basti' (unpublished paper). The pottery found from Imlidih and Sikridih included balck-and-red ware (Plain and painted), black slipped ware (plain and painted), red ware (slipped and unslipped) and NBPW. Among noteworthy forms met within the wares are pedestal bowl, dish-on-stand, deep bowl with everted rim etc., and have been compared with Narhan, Pandurajardhibi and Chirand. Both the sites have been identified as chalcolithic by the authors.

15. Ibid. At both the sites viz. Brahmapur and Lalmanpur, black-and- red ware, black slipped ware, red ware, cord impressed pottery, NBPW and grey ware are found. According to the authors the cultural assemblage found from these sites are comparable with Narhan.

16. **IAR 1968-69**, pp. 34-35. black-and-red ware (plain and painted) and black slipped ware are found.

17. **IAR 1983-84**, p. 88, The surface finds included black-and-red ware, black slipped ware, NBP and red ware in abundance. Noteworthy shapes are dish-on-stand, perforated footed bowl etc.

18. Explored by the present author in the year 1961-62.

19. **IAR 1962-63**, p. 43.

20. **IAR 1978-79**, p. 23

21. Ibid. p. 23. The sites of Akahwa, Itwa and Kanpa have been identified as chalcolithic yielding short blade showing crested ridged technique, black slipped, black-and-red, grey and red wares. Noteworthy shapes encountered are bowls with everted rim, pedestal bowl, dishes, funnel shaped lids or bowls.

22. **IAR 1977-78**, p. 57. pl. XXVB.

As many as twenty six chalcolithic sites are reported in Pratapgarh district. These sites yielded black slipped ware, red ware and grey ware. Some of the sherds of the black slipped ware show white painting in linear pattern on both sides of the ware. The black-and- red ware is not reported from any site. Besides these Puredeojani, Pelkhawar and Bhewani are other chalcolithic sites yielding Koldihwa group of pottery (Pal, J.N., op.cit., p. 146.

23. **IAR 1963-64**, pp. 43 and 45

24. The field work was conducted during the session 1989-90 by the present author, under the auspices of the department of A.I.H.C. & Archaeology, B.H.U.

25. The exploration was done under the direction of Prof. P. Singh, under the auspices of the department of A.I.H.C. and Arch., B.H.U.

26. Bhatta, S.K., 'Archaeological Explorations in Basti District U.P. **Puratattva, No. 3**, Varanasi (1969-70), pp. 77-78, also Singh, Birendra Pratap, 'Gulrihvaghat and Lohra Dewa : Chalcolithic Settlements in District Basti, Uttar Pradesh' **Pragdhara, No. 1**, Journal of the U.P. State Archaeological Organization, pp. 89-93, Lucknow (1990-91). There are two sites known as Gulrihwaghat Tendua (Lat. $26^0$ 47' 10" N, Long. $82^0$ 29' 30" E) and Gulrihvaghat Gobhia (Lat. $26^0$ 47' 10" N, Long. $82^0$ 30' 10"E). The surface finds suggests two distinct deposits at the site: Pre-NBP and NBP. The former is characterized by the black slipped ware (plain and painted both), black-and-red ware (plain and painted both), Red ware (slipped and unslipped), burnished black ware and corded ware. Noteworthy shapes encountered in the above wares included corrugated bowls, dishes-on- stand, perforated footed bowls, lipped basin. Terracotta ghat shaped bead, stone chips and beads of semiprecious stone are other finds. The assemblage is comparable with Khairadih I, Narhan I and Senuwar II.

27. Similar pottery is found from the site (Lat. $26^0$ 45' 20" N, Long. $82^0$ 31' E)as mentioned in the case of Gulrihwaghat.

28. Chaturvedi, S.N., op. cit., 1985, p. 106.

The site of Lohra Dewa (Lat. 26 46' N, Long. 82 57' 30" E) referred to in the above literature as Lahuradeva was revisited by the present author. Here also deposits of two distinct periods pre-NBP and NBP (Early and late phase) are clear from surface finds. The former is comparable with Khairadih I and Narhan I and represented by the ceramic industries viz. black-and-red ware (plain and painted), black slipped ware (plain and painted), red ware, fine grey ware and cord impressed pottery. The last two wares are represented by a few sherds. Noteworthy shapes included pedestal bowl, dish-on-stand, perforated footed bowl. Few stone chips are found but microlith is absent.

29. Sites of Ammadei and Karuhi were explored under Prof. P. Singh. Both the sites have been identified as chalcolithic settlement.

30 Chaturvedi, S.N., op.cit, 1985, p. 106, Sharma, G.R., Bharatiya Samsakriti Puratatvika Adhara, pp. 71-72, also Pal, J.N., op.cit., p. 118.

Two sites **viz.**, Susipar and Barhagon in the Sadar Tahsil of Basti are reported. These sites yielded cord impressed pottery, black-and-red ware, black slipped ware, grey ware and red ware along with microliths (**IAR 1983-84**, p. 87). Susipar was revisited by the present author. There are two localities Susipar north (Lat. 26$^{0}$ 44' 20" N, Long. 82$^{0}$ 46' E) and Susupar south (Lat. 26$^{0}$ 44' 10" N, Long. 82$^{0}$ 40' E). Both are situated on the left bank of the river Kuwana. The former is represented by Kushan pottery while the latter is represented by early and late phases of NBP and Kushan pottery. The pottery collected from the site included black slipped ware and grey ware. Besides a bead of chalcodony and stone chips were also collected. Neither the microlith nor the corded ware was found, the assemblage utmost suggests existence of early and late phase of NBP at the site and hence the view that the neolithic and chalcolithic (Kakoria-Magha phase) are represented needs revision of the view.

31. Sinha, B.P., and Verma, B.S., 1977 **Sonpur Excavations**, Patna, p. 135.

32. Chaturvedi, S.N., op.cit.1985, p. 106, see also Sharma, G.R., op. cit., 1985, pp. 71-72.

33. **IAR 1974-75**, p. 8.

34. **IAR 1966-67**, p.6.

35. **IAR 1977-78**, pp. 17-19.

36. **IAR 1984-85**, pp. 11-12.

37. Singh, Birendra Pratap,"The Chalcolithic Culture of Southern Bihar as Revealed by the Exploration and Excavation in District Rohtas" **Puratattva, No. 20**, (New Delhi), pp. 83-92.

38. Pal, J.N., op.cit, pp. 164-165.

39. Chaturvedi, S.N., op. cit., p. 104

40. Singh, P., et al. 'Explorations along the Kuwana River in District Gorakhpur and Basti'. **Pragdhara, No. 1**, pp. 69, ff.

41. Roy, T.N., 'An Indication of the chalcolithic culture at some sites of Eastern Uttar Pradesh' **Bharati**, 1983 New Series, No. 1, Varanasi pp. 92-93.

42. Pal, J.N., op. cit., p. 169.

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